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An Address.¹

By H. DOUGLAS STEPHENS, M.D., M.S. (Melbourne), F.A.C.S.,

Retiring President of the Victorian Branch of the British Medical Association.

At the outset of this address let me take the opportunity of thanking you for the high honour you have bestowed upon me in electing me as your President for the past year. Of the honour and its attendant responsibilities I have been deeply sensible and I trust that I shall discharge this, the last of my presidential duties, in a manner not unworthy of the office.

In giving consideration to the subject of the address, my first inclination was to attempt a review of recent progress in the realm of paediatrics. The alternative was to survey the movements of the last twelve months in those public questions which particularly affect the medical profession. Although I should have felt more confident in the first mentioned field, I am entering the other as more appropriate to the occasion.

That my remarks will appear fragmentary and discursive is, I am afraid, inevitable, in view of

the limited time at my disposal for the discussion of questions of great magnitude and complexity.

Report of Royal Commission on Health.

A work of very great importance to the medical profession throughout Australia was published early in the year and we in Victoria should be particularly proud of it by reason of the fact that two of the five members comprising the commission are Victorians. To Sir George Syme as Chairman of that commission and to the other commissioners the public generally and the medical profession owe a debt of gratitude for the extraordinary amount of work and the detail embodied in the report, for the far-reaching conclusions arrived at and last but not least the promptitude with which it was completed and published. I doubt if ever a commission having so many references has done such a vast amount of travelling and work and completed their task within one year of the issue of the commission as the Royal Commission on Health has done.

The impression gained by a general perusal of the report is that the recommendations of the commission would be of immense benefit to the Commonwealth if the Federal Government had power to adopt them and finance to control them. Apparently the commission would like to see the Commonwealth Government in a position to perform

¹ Delivered at the annual meeting of the Victorian Branch of the British Medical Association on December 1, 1926.

the functions of the Ministry of Health in Great Britain and generally assume complete control of health legislation and administration. This probably could not be done adequately without delegating some functions to local authorities in the several States, owing to the enormous extent of country involved, diversity of climate and other factors. It is satisfactory to note that a definite step towards the realization of one of the most important recommendations of the commission was accomplished at a recent conference of the Ministers of Health of the Commonwealth and several of the States held expressly for the purpose of considering the recommendations included in the report of the Royal Commission on Health. This conference virtually accepted the proposal to establish the Federal Health Council whose functions will be to devise measures for cooperation between Commonwealth and States and to promote uniformity in legislation and administration where advisable. From the acceptance of this it will follow that some of the other most important recommendations will be considered, such as the model scheme for the prevention of infectious disease, the question of the adoption of uniform measures for control of food and drugs, the recommendation concerning maternal hygiene, the provisions for the promotion of child welfare, the general principles on which industrial hygiene should be based, and the plan for the cooperation of the practising portion of the medical profession with the public health authorities. The general effect of the adoption of these recommendations will make for coordination of function and uniformity of action in the various States and the enlistment of the general practitioner's services in the army of preventive medicine. The commission recognized the prime importance of the general practitioner in any scheme for the improvement in the health of the community. He it is who sees disease in its earliest phases and is frequently in possession of much valuable information as to its incidence and causation, information which is not always available to the health authorities, but which if available would materially add to the efficiency of our means of combating disease and incidentally make for greater accuracy in our vital statistics. Uniformity of certificates alone will be all to the good and the adoption of a common form of nomenclature of disease (such as is being drafted at the present moment in Victoria) will meet with general approval. The inclusion of the services of the general practitioner in the general health scheme outlined by the commission will have the effect of materially increasing the responsibilities of the practising members of the profession as well as creating additional work, especially clerical work which is so distasteful to most of us. I believe our members will recognize the value of such service in improving the national health and do it willingly, if the Government will also recognize its responsibilities and remunerate the profession adequately for services rendered. The commission considered that a greater number of experts highly trained in public health was needed in Australia and suggested that they should be provided and given such status and

salary as would attract medical practitioners of exceptional ability.

Maternity Hygiene and Child Welfare.

To some extent influenced by the recommendations of the Royal Commission, but also because he has always evinced keen interest in the subject, Dr. Stanley Argyle, Minister of Health for Victoria, and my predecessor in the presidential chair, took the matter up practically and promptly. He secured the services of Dr. Main and Dr. Scantlebury, two ladies well known for their special knowledge of the welfare of women and children, and sent them to New Zealand to study the subject at first hand. Their valuable report has also been submitted and published without delay. It emphasizes the immense value of infant welfare to the community generally and advises the Government to extend the movement in many and various directions. As a first step a part-time medical director (Dr. Vera Scantlebury) has been appointed to organize all infant welfare and baby health centres and to supervise all nurses in these centres. The appointment will meet with general satisfaction though we as a profession regret that a full-time, adequately paid appointment was not made in view of the importance of the work to be done. If the internecine warfare waged between the two associations subserving baby welfare in this State could be abolished and the total eighty centres coordinated under one control, results comparable to those achieved in New Zealand could be expected. The widespread propaganda undertaken by the New Zealand Society and the Plunket nurses in favour of breast feeding is the factor which beyond all doubt has established the success of the system in that country.

An insular climate with a lower range of temperature than Victoria and an almost total absence of flies, together with the fact that the largest city in the Dominion had a population of 180,790 only at the last census, would account in no small measure for the remarkably low incidence of summer diarrhoea in that country. As epidemic diarrhoea is an important factor in the mortality rate among infants in the first year in Victoria, a widespread advocacy of breast feeding and the institution of a pure milk supply for infants in the larger cities would go far to improve matters. Both this report and that of the Royal Commission strongly advocate increased facilities for attention to women before child-birth and it is interesting to anticipate the manner in which this would affect the infant mortality rate. Dr. Marshall Allan, the Director of Obstetrical Research, in a comprehensive interim report dealing with maternal mortality and morbidity and submitted to the Branch quite recently, showed that the death rate for infants under one month had remained practically stationary in Victoria for the last forty-five years and varied between thirty and forty deaths per thousand *per annum*. This means that more than 50% of infant deaths in the first year occur within the first month after birth and of these about 70% occur in the first week. Of these early deaths Dr. Allan has established a good case for attributing 98% to abnormalities of pregnancy and labour. Dr. Allan is convinced that im-

provement in the teaching of obstetrics is beginning to bear fruit, so that in the near future we may expect to see a steady decline in the mortality rate among infants, especially if prenatal supervision is efficiently established. Dr. Main and Dr. Scantlebury's recommendation to insure a safe supply of milk for infants who are artificially fed, follows generally the lines laid down by the Lady Talbot Milk Institute in Melbourne some years ago, with bacteriological standards equivalent to the grade A milk of New York; they further wisely advise boiling all such milk during the summer. Whilst thoroughly agreeing with this aspect of the report, I feel that as so much of the general milk supply is used for the feeding of infants the report should have gone further and stated the standards to be adopted for improving the milk supply for the community generally in the larger cities and towns of Victoria. My views on this subject were embodied in a presidential address to the Melbourne Medical Association some years ago and are thoroughly in accord with the advice given by Mr. Herron, of Wellington, New Zealand, in his exhaustive and practical report on the problem of the milk supply submitted to the Melbourne City Council this year. In this report he states that the general supply in Melbourne of a safe, unpasteurized milk is a practical impossibility.

In the discussion of the operations of the various welfare associations it will be seen from the report that genuine attempts are made to safeguard the interests of the general practitioner, nevertheless, as is the case with the Bush Nursing Association and the District Nursing Society, many medical men look upon their activities with suspicion and distrust and regard the nurse in the light of an unqualified practitioner. Dr. Main and Dr. Scantlebury in commenting on the New Zealand system said that the work generally of the nurses was good, but there was a tendency for them to overestimate their responsibilities and to underrate the knowledge of the medical profession. The line of demarkation between prevention and treatment in respect to infant feeding is almost imperceptible and difficulties occur leading to conflict between nurses and doctors. The Royal Commission on Health considered it imperative that all such centres and all schools of mothercraft should be under responsible medical supervision. Just how this should be done is a difficult problem. In Queensland the appointment by the Government of an honorary medical officer from the medical men in the district is the method adopted and I am informed that it is a cause of much recrimination amongst the medical practitioners. In these times it is against the interests of our profession to encourage any extension of the honorary system except in the case of the poor and needy. A visit to some baby welfare centres will soon satisfy the most sceptical that the activities of these organizations are by no means limited to the poor. The policy of the Victorian Branch of the British Medical Association is simply that the regular visiting of baby welfare centres by medical practitioners engaged in private practice in the district is undesirable. In the absence of any

definite suggestion that will solve the problem, I feel that good would eventuate if the medical men in the district were adequately represented on the local committee much in the same way as in the case of the Bush Nursing Association. Consideration might also be given to the system in operation in Chicago where a medical man practising in one district is paid an honorarium by the welfare association to supervise once or twice a week the centre in an entirely different and often remote district.

The health of the child determines the future health of the adult and when there are seen such disquieting figures as have been put before us recently, showing 40% of Australian youths unfit for military service, it behoves us to advocate the scheme which we consider most capable of remedying the evil however antagonistic it may be to the financial interests of the profession.

Education of the Public in Medical Matters.

There is an increasing desire on the part of the general public for fuller knowledge on health matters and the public is insistent that such information should be authoritative. Not only is instruction demanded on subjects dealing with the prevention of disease, but an insatiable demand for information relating to curative medicine and surgery has arisen. There has never been any restriction on the Government health authorities in supplying all the information needed in respect to the preventive aspect and they have succeeded admirably. The health week campaigns organized by the Public Health Association of Australasia have done much to interest the people in community health and the prevention of disease. On the curative side, however, those most capable of supplying the desired information are generally men in the active practice of their profession and public expression of their opinions, no matter how carefully presented, whether by lecture, in the public press, on the cinema screen or by radio broadcasting, is a form of advertisement which cannot be tolerated. The Council has for years been doing its utmost to induce the press to publish all such communications anonymously and have succeeded materially in doing so. It is becoming more apparent that anonymous contributions on subjects of this nature do not carry sufficient weight and influence. The Council has within the last few months endeavoured to meet the situation by creating a special public questions committee part of whose duty will be to supply the press with information on medical matters or to refer the questions to someone capable of giving the desired information. All such subject matter is to be supplied anonymously, but with the imprimatur of the Victorian Branch of the British Medical Association. Already much good has been done by this committee and it is to be hoped that the steps taken will have the effect of preventing such unseemly happenings as have occurred in England through undue publicity given to individual medical utterances. The rapid increase in the incidence of cancer in Australia and the need for educating the public in its earlier manifestations were the main reasons for the appointment by the Council of the Cancer Propaganda Subcommittee in June last. The valuable

work done by the chairman of this committee, Sir George Syme, and Dr. Charles Kellaway, Director of the Walter and Eliza Hall Institute, is too fresh in your memory for me to enlarge on its merits, but if it succeeds in deflecting patients in the early stages of malignant disease from the hands of quack practitioners into the hands of those qualified to deal with them, it will have accomplished something of national importance. Still another means of supplying the public with reliable and authoritative information on medical matters is about to be undertaken by the Australasian Medical Publishing Company, Limited. It is the intention of this company to issue a popular journal on health, comparable I imagine to *Hygeia*, the publication subserving similar interests in America.

Public Hospitals.

Public interest in medical problems has been largely stimulated by the extraordinary increase in the number of people attending public hospitals and their familiarity with all that pertains to these institutions. Fifteen or twenty years ago it was a difficult matter to induce patients to enter such institutions; now it is more difficult to keep them out. The reason for this is obvious to all medical men. It is primarily concerned with the amazing advance in knowledge and the inevitable development of highly specialized medical and surgical practice. No single practitioner at the present day can aspire to be "all things to all men." He is obliged to seek the cooperation of those of his colleagues who have cultivated one or other of the special departments inseparable from the complexity of modern medicine.

The concomitant of conscientious work on the part of the medical man in endeavouring to insure that every line of scientific investigation and treatment is followed in the interests of his patient is naturally increased cost to the patient. Many people who could meet the expenses of medical attention a generation ago, are now unable to do so and the public generally realize and appreciate that in the public hospital is to be found a compact unit in which all facilities for scientific diagnosis and treatment are to hand. There the physician, surgeon, radiographer, pathologist and biochemist work in a team and the benefit of the best consultative opinion is secured to the patient.

That the public hospitals are so efficient and abreast of progress in medical science and surgical art is due in no small measure to the initiative and enthusiasm of their honorary medical staffs. The medical profession itself, therefore, by its unremunerated efforts in the public hospitals has done most to bring about the present condition of affairs in which the high state of efficiency of these institutions creates an unprecedented demand upon their services.

The hospital of today is so much more than a nursing home, its various accessory services and special departments involve the committee of management in such greatly increased maintenance expenditure that for years past the governing bodies have been obliged to charge the patients according to their means. The conception of a

public hospital as an institution for the indigent poor must go by the board and the recognition of that fact implies that the medical profession must reconsider its relation to the public hospitals.

There is not sufficient time at my disposal to discuss the policy the profession should adopt, but I wish to assure the members of this Branch that the Council has given very earnest consideration to the subject. The Legislative Subcommittee has formulated a policy which was considered at a special meeting of the Council on November 29, 1926. Concrete proposals will be placed before the Branch at a special meeting called for the purpose on December 8, 1926.

Hospital Treatment.

As has been said, faith in hospitals and in hospital treatment on the part of community generally has developed *pari passu* with the improvement in public hospitals and the enormous progress in scientific medicine during the last quarter of a century. How has this change in public opinion towards hospital treatment affected the interests of the medical profession and in what way has it been met? In the limits of the time at my disposal it is obviously impossible for me to do more than skim the surface of the many problems which arise from a consideration of this subject. A quarter of a century ago the attitude of the profession towards hospitals was that no payment whatever should be taken from patients treated at hospitals maintained by the donations of the charitable and by government grants. This was subsequently the text of a resolution adopted by the Australasian Medical Congress in 1908 and reaffirmed at a later Congress. This is still the policy of our Branch of the Association in spite of the fact that the taking of payment from patients is legalized under the *Charities Act*. In 1901 patients attending the public hospitals in Victoria contributed £14,885, whilst in 1926 their contributions reached the enormous amount of £123,655. During this period the population increased 21.4%, whilst in-patients increased 112% and separate out-patients 161%. In 1901 the percentage of hospital patients to total population was 7%, but in 1926 the percentage had risen to 14.5%. When it is realized that the medical profession in one year treat 247,333 separate patients at public hospitals in Victoria entirely free of charge, even though they contribute £123,655 towards their maintenance in hospital, some idea of the altruism of the medical profession is obtained. Another interesting comparison is the rate of growth of the medical profession. For the first five years of this century the number of doctors qualifying was 151, whilst for the last five years the numbers have increased to 540. During this time the population has increased from 1,400,000 to 1,700,000. On the basis of one medical practitioner to every fifteen hundred of the population Victoria is sufficiently provided with doctors to satisfy all requirements for the next seven years. In view of the exploitation of the profession, as shown by the above figures, the great increase in the numbers of medical men practising and the enormous advance in the cost of living, it stands

to the credit of the medical profession of Victoria that there has been no general increase in ordinary medical fees charged to patients.

Post-Graduate Teaching.

The educational standard of the medical profession in Victoria has always been high, a lasting tribute to our University and clinical teachers. Since the termination of the War, however, a gratifying demand has set in on the part of the profession for post-graduate teaching. For the benefit of members of the Victorian Branch of the British Medical Association the Council met the demand in splendid fashion. It created the Melbourne Permanent Post-Graduate Committee, as well as several sections of the Branch, it reactivated the Scientific Committee and organized special scientific meetings of the Branch in various country centres. The activities of all these have earned unstinted praise from the large numbers of post-graduates who have attended the lectures and demonstrations; very many of them are from other States. Although my time is limited, I cannot refrain from expressing my heartiest appreciation of the work done and the magnificent results achieved in improving the standard of medical and surgical work throughout the profession. To the Melbourne Post-Graduate Committee is due the honour of making Victoria the centre of post-graduate work throughout the Commonwealth. Free interchange of thought and consequent education in medical affairs, not only of scientific interest but also pertaining to ethical, legislative and organization matters, will be the outcome of the successful Branch meetings held during the year at Ballarat, Geelong and Bendigo and the results amply warrant a continuance of the system. Other sources of post-graduate training are the excellent meetings arranged by the various sections of the Branch. Of these I may mention the Radiological, Gynæcological, Psychiatric, Eye and Ear and Orthopaedic Sections as having been active during the year. In addition, other societies, not directly connected with the Branch, whose members are required to be members of the British Medical Association, have provided opportunities for advance in clinical knowledge and have helped considerably in raising the standard of medical practice. I refer to such active organizations as the Melbourne Pædiatric Society, the Surgical Association and the clinical societies of the various hospitals whose clinical evenings have been such popular features in the yearly syllabus of the Victorian Branch.

The teaching staff of the University has been active in its efforts to improve post-graduate status and those who have had the privilege of attending the anatomy and pathology demonstrations, have been unanimous in their appreciation of their value. I am of opinion that the sum total of post-graduate activities in Victoria warrants the claim that the medical profession is striving unceasingly to advance in knowledge and maintain a scientific standard at least equal to that in other lands. Possibly public appreciation of this fact would result in mitigation of criticism sometimes directed against us.

In conformity with the demand for post-graduate teaching it is realized that certain readjustments will of necessity be required in undergraduate training. Already a comprehensive scheme has been prepared by Professor Berry, Dean of the Faculty of Medicine at the Melbourne University, whereby the medical course which has been recently extended from five to nearly six years will be subject to complete revision. Although not publicly announced or submitted to the profession for criticism, I am not I think betraying confidence when I say that this scheme is based on the model drawn up by the General Medical Council in Great Britain and I understand will ultimately be the basis for the curricula of the various medical schools in the old country. If for no other reason than that reciprocal relations between the Universities of Great Britain and the Dominions might be endangered, the earnest consideration by the profession of this scheme is imperative.

The Charities Board.

Side by side with this improvement in medical education and strictly comparable has been the noteworthy improvement in hospitals generally throughout Victoria. The passing of the *Hospitals and Charities Act* in 1922 and the institution of the Charities Board initiated a vigorous policy directed towards increasing the efficiency of public hospitals throughout the State and coordinating them into a system which other States are advised to copy. Although in existence only a few years, the Charities Board is doing splendid work throughout the country districts in its efforts to create base hospitals thoroughly equipped in every detail, so that they will be able to cope with all classes of medical and surgical work arising in the district. These hospitals in course of time will be counterparts of the city hospitals and will have the effect of stemming the drift of country patients to the metropolis. They will also have the effect of attracting to their staffs some of the best trained men in the profession and should prove in time to come excellent centres of post-graduate training.

Changed Conditions of Practice.

Undoubtedly an economic factor of serious importance has been insinuating itself into the medical profession and changing the whole aspect of private practice. It is due to hospitalization of the community, the enormous increase in the ratio of doctors to the population, especially in the larger cities and towns and also to the fact that the State and municipalities have been assuming the supervision and treatment of many diseases which in my recollection were part of the general practitioner's daily work. Although the care of mental diseases has been in government control for a very long time, relatively more patients were formerly treated by private practitioners in their homes and in private institutions than are at the present time. A very serious inroad into the sphere of general practice was the establishment of the Infectious Diseases Hospital at Fairfield. The rapid growth of this most valuable institution to some six hundred beds

in a comparatively few years is significant of the economic loss to the practitioner. Fees cannot be paid by patients to this hospital supported as it is by the municipalities. There is no private institution for the reception of patients suffering from infectious diseases nor are there any beds allotted in the public institutions where outside medical men can attend such patients. The consequence is that patients with infectious diseases living in hotels, restaurants and many apartment houses and flats who would otherwise be private patients of their own doctors, are compelled to seek admission to the hospital. In the interests of the public and for the prevention of disease this, of course, is eminently desirable, but the profession suffers thereby. To particularize further the various institutions, societies, clinics and associations which by incursions into the domain of the practitioner of medicine have altered medical practice so completely, would serve no further useful purpose. Venereal diseases clinics, sanatoria for tuberculosis, bush nurses, baby welfare centres are but a few which come at once to my mind. Doctors have been accused of commercialism and if this refers to the practice of fee splitting or self advertising, except in the legitimate way through proper professional channels, then no loyal member of the profession has anything to say in its favour. But if by commercialism is meant the efforts of the profession generally to secure adequate reward for work done, then the term has not that sinister imputation usually attributed to it. So great has been the financial loss to the profession through what has been regarded as imposition on hospitals by a large section of the community who cannot be classified as poor and needy, that definite steps will have to be taken to provide a remedy. The changed relations of the public hospitals to the community necessitate a change in the attitude of the profession. Dr. MacEachern, Associate-Director of the American College of Surgeons, strongly advocated the extension in modified form to our public hospitals of the community hospital system adopted with so much success in America, but realized that this could not be brought about in old established institutions by a stroke of the pen. In view of the very urgent need of accommodation for paying patients, particularly the middle class, he advised the addition at once of paying or intermediate wards or of separate intermediate hospitals, to cope with the requirements. Dr. Brown, of Colac, in an excellent address to the Branch at the Geelong meeting in July stated the case of the position of public hospitals in relation to the medical profession very clearly and succinctly. "We should insist," he said, "on the public hospitals being opened to all classes of patients in the community and we should insist on our right to charge all but the really necessitous moderate fees."

I find I am being led into a discussion of the policy of the profession with respect to hospitals, but it would perhaps be wise to avoid the temptation in view of the fact already indicated that the considered policy of the Council is to be laid before a special meeting of the Branch one week from this date.

Conclusion.

In conclusion may I say that I realize that I have been dealing with questions of great difficulty and importance and am conscious of the fact that I have been unable to treat them adequately.

In the difficulties with which as a profession we have to contend, we must not fail to remember that as members of the great British Medical Association we are bound to maintain the "honour and interests" of the medical profession. Let us not lost sight of the "honour" in pursuit of the "interests." I interpret the honour of the profession as embracing a strict adherence to the code of ethics and constant endeavour to advance in professional knowledge. The Hippocratic oath should still be our creed.

THE HEART AND THE NEUROSES.¹

By N. W. MARKWELL, M.B., Ch.M. (Sydney),
Brisbane.

THE diagnosis of a cardiac neurosis is cardiological, the treatment neurological. An important normal criterion is lacking in either. We possess no definite measure of the health of the heart muscle. We do not know the basis of the neuroses and, before we can appreciate this, we require a clearer conception of the fundamentals in normal psychology. Two working hypotheses are brought forward respectively. The primary systolic phase is a physiological concept held to be a measure of the health of the main muscle—the pumping muscle—of the left ventricle. The instinct of docility is a normal psychological concept held, firstly, to be the basis of suggestion, secondly, to be the biological mechanism by which the human being acquires the accumulated experience of the ages and thirdly, with the gregarious instinct to be the site of the derangements which cause the neuroses and psychogenetic psychoses. The significance of dilatation of the heart is discussed also.

The Primary Systolic Phase.

Nervous symptoms are common in frankly cardiac disease. But, important as they sometimes may be, they are of minor importance. In another class of heart cases functional heart disease may exist with more or less severity, but the main lesion is outside the heart, as for example in hyperthyroidism. In a third group the heart is healthy, but the symptoms are referred to it owing to dissociated anxiety. The neurotic heart is a cardiophobia; its onset is not uncommon during convalescence from acute infectious disease or accidents.

Most cardiac conditions may be appreciated by due attention to aetiological factors past and present, to the valves, to the junctional tissues, to the shape and size of the heart and to the history of response to effort. But the differential diagnosis between the second and third groups may be difficult owing to the need of a categorical measure of the health of the heart muscle. Further, we cannot trust a

¹ Read at a meeting of the Queensland Branch of the British Medical Association on July 2, 1926.

neurotic's history of his response to effort—our best indication at present. A further difficulty exists in that structural alterations may be present in a healthy heart, namely, changes in the size of the heart chambers. This will be discussed in connexion with dilatation. The differential diagnosis between the second and third groups mainly depends at present on intuition from experience.

The description of the primary systolic phase is a theory formed to explain a period in clinical cardiograms which is held to be a categorical measure of the health of the muscle of the left ventricle. It is postulated to be the phase of rapidly rising tensions occurring about the first two-fifths of ventricular systole. The duration of the first heart sound is held to represent approximately the duration of this phase. The latter sign is of value in the normal heart and in patients with acute myocarditis in whom the heart was previously normal, but is of little practical use in chronic heart conditions. A wider field of application is promised by the cardiographic sign which represents the primary systolic phase exactly. The hypothesis of the primary systolic phase is associated with a minor hypothesis, namely, the unorthodox view that the first heart sound is produced by impact. This enabled me to predict the presence of the cardiographic period. It may have been coincidence. But as that with other new orientations was found necessary as the investigation proceeded, a short account of the latter may be of general interest.

Death from acute myocarditis occurs in very few natural diseases and with one exception it is rare. Even in diphtheria it is often accelerated by some other lesion, for example, vascular relaxation. Beri beri is an unnatural disease due to man tampering with his food. Myocarditis is the rule in cardiac beri beri and death was common before the aetiology was understood. Beri beri by contrast demonstrates the remarkable vitality of the heart muscle under natural circumstances; the evolution of the heart muscle has resulted in extraordinary resistance to natural stresses.

Beri beri is particularly suitable for the clinical study of loss of health of the heart muscle. A frank acute myocarditis is uncomplicated by lesions of the junctional tissue or endocardium. Præcordial findings in several hundred cases of this disease as well as in many other hearts were noted between 1912 and 1921, especially during the first three years. I could give the prognosis of a new patient's condition after some years with a fair degree of accuracy, but could not tell how. I realized that the first heart sound was important in some way. But, being obsessed by traditional views on dilatation, I tried vainly to make explanations fit in with this phenomenon always prominent in severe cases. Starling⁽¹⁾ published his work on physiological dilatation meanwhile. Reviewing my notes in 1921, I came to the conclusion that the length alone of the first sound is the prognostic category in cardiac beri beri, the sound becoming shorter with the seriousness of the condition. There had been another hindrance, also of general clinical interest.

The first heart sound in the last stage of beri beri may seem identical with that in some by no means serious cases or even in some practically healthy hearts. It was now realized that such apparently similar first sounds were essentially different. The first heart sound may be latent to the sense of hearing either wholly or more commonly in its latter part. The latter form of latency occurs in those first sounds which resemble that of the last stage of beri beri. Gowers⁽²⁾ pointed out fifty years ago that the first sound is short in myocarditis. The full significance has been obscured by the tendency of the sound to become latent. Moreover, latency is particularly liable to occur in large hearts.

It is common knowledge that the first heart sound varies conspicuously in quality, loudness and præcordial incidence from patient to patient and from time to time in the same patient, even with a healthy heart. By 1915 I had become convinced that only one theory of production could account for all the vagaries of the first heart sound in hearts with normal mitral valves, namely, impact of the heart on the tissues in front of it. Holding this view of first sound production and suspecting the importance of this sound in prognosis, I had taken many cardiograms with Mackenzie's polygraph since 1915 with the hope of finding a sign here also. However, being obsessed with the traditional viewpoint regarding the form of the waves, I had not thought of measuring the periodic incidence of points. After concluding in 1921 that the length of the first sound was a criterion, I found a constant point about the time of termination of the sound, namely, about 0.13 of a second after the commencement of ventricular systole in normal hearts and 0.1 of a second or less in patients with acute myocarditis from cardiac beri beri or acute rheumatism whose hearts were apparently normal previously. Moreover, the shortening of this period seemed to vary directly with the degree of muscular damage. Lastly, it was found that this period was lengthened in cases of hypertrophy of the left ventricle from about 0.15 of a second to 0.2 of a second, apparently in relation to the degree of hypertrophy. The lengthening may be watched in convalescence after the occurrence of a new "set," for example, in rheumatic fever.

The hypothesis of the primary systolic phase is still only theory. No experimental work has been performed. But more than this, I have not been in a position to test it in further cases of beri beri. Nor have I been able to work out the modifications, if any, of right ventricular preponderance by means of an electrocardiograph. The following account of the theory is held at present to apply only to the normal heart and to those abnormal hearts which possess at least a similarly relative degree of left-sided preponderance. The clinical assertions are based on observation. The minor hypothesis of the oblique movement is pure theory.

The Oblique Movement.

Pulsation felt during ventricular systole is held to be due to a forward movement of the ventricular mass as a whole in a direction obliquely across the

direction of the ventricular axis. This, the oblique movement, is postulated to be caused by and to occur synchronously with a phase of rapidly formed energy during the first part of left ventricular systole—the primary systolic phase.

Curves of intraventricular pressure and myocardiograms⁽³⁾ show two periods during ventricular systole. A rapid rise is followed by a more or less definite plateau. Two theories have been held to account for this picture. It used to be held that the beginning of the plateau synchronized with the opening of the semilunar valves. Yandell Henderson and others have shown that these open appreciably before the end of the up-stroke. Some hold that ventricular systole is not really divided into two periods, the apparent division being due to instrumental defects. But Kahn is said to have observed that the period of the first heart sound corresponds to the period of the first part of ventricular systole in dogs. Further, this period occupies about the same interval as the cardiographic criterion and the first heart sound as measured in published phonoelectrocardiograms and in curves taken by the micrograph of Crehore.⁽⁴⁾ This may be coincidence and no attempt has been made to see whether this period becomes shorter in laboratory experiments with diseased heart muscle. But ventricular systole will be assumed to be divided into two phases for the purposes of a working hypothesis. A period of rapidly formed energy is abruptly followed by a more quiescent period. Pumping blood into the aorta (in the case of the left ventricle) is the natural outlet of this energy. Considerable resistance is met, not only before the semilunar valves are opened, but more so afterwards as the pressure ahead continues to be raised. The primary systolic explosion therefore generates considerable tension as long as it lasts. Some of its energy is wasted in a sideways motion of the heart because the ventricular mass is not held rigidly within the thorax. This is the oblique movement.

The axis of the left ventricle lies between the anatomical apex and the aorta. It virtually remains the same length owing to the antagonism of the longitudinal and circular fibres, so that the left ventricle contracts towards it to empty itself.⁽⁵⁾ The left ventricle is by much the main bulk of the ventricular mass in the class of hearts under discussion. The ventricular mass may therefore be described as a main ventricle—the left ventricle—carrying a minor chamber—the right ventricle—in front of it. The right ventricle is not only smaller in bulk, but it contracts by its fibres which are longitudinal pulling down its base. The axis of the left ventricle is therefore the axis of the whole ventricular mass. The auricular muscle has relaxed before the commencement of ventricular systole. Therefore, when the ventricular mass begins to harden, it is virtually suspended within the thorax by a stalk at its base consisting of the attached aorta and pulmonary artery. The aorta is not rigid, but elastic. Its consistency resembles that of a garden hose. Some of the rapidly formed, pent-up energy is wasted, because the virtually

suspended ventricular mass is able to spring forward.

The aortic stalk is at first the only fulcrum. But almost immediately after the commencement of ventricular systole the left lower area of the anterior heart wall makes contact with the anterior chest wall, only a thin layer of lung with its coverings lying between. This area now acts as a fulcrum as the oblique movement continues to lever the anterior heart wall on to the chest wall successively towards the right. After making contact, the heart continues to press forwards against the chest wall for the duration of the oblique movement and the soft tissues of the chest wall tend to yield. The oblique movement is only an expression of wasted energy of the primary systolic phase, but it is also synchronous with it and we are able to gain clinical manifestations of the primary systolic period. These are, firstly, an exact representation of the period by means of the primary systolic phase of the cardiogram and, secondly an approximate representation, at any rate in normal hearts, by the length of the first heart sound. It is to be kept in mind that, whilst the primary systolic period is held in this paper to be an expression of left ventricular action only, its clinical manifestations are paradoxically produced directly by the right ventricular anterior wall acting passively, because it happens to be carried in front of the main bulk of the left ventricle during the oblique movement.

The First Heart Sound.

The old classification of a left and right heart sound was partly due to the clinical fact that its form, quality, loudness and length is different on either side of the normal præcordium. It is crescent at the apical beat. It is very often crescendo near the left of the sternum, especially in the healthiest individuals. Although apparently different on either side, the first sound is held to be essentially the same thing all over the præcordium of the normal heart. It is produced by the oblique movement causing the anterior heart wall to make impact with the anterior chest wall. Nevertheless just as the oblique movement is divided into two phases, so is the first heart sound divisible into two main parts.

The first heart sound consists of a short, sharp, clear element followed by a more or less rumbling tail. The former is called the B element. The tail is more liable to become latent. Should it be so whilst B is still audible, the first sound has the appearance of being short. B in the normal heart is heard loudest at the left lower angle of the præcordium, namely, at the apical beat and here it is the loudest sound element heard on the præcordium. By carrying the stethoscope successively across the convexity of the anterior heart wall between the apex and the base one hears B become fainter and fainter. On the other hand, the tail is often not heard to the left of the apical beat, but it becomes more and more distinct as one passes in that way to the right and slightly upwards. As one nears the left sternal edge the rumbling tail becomes heard

most distinctly and it may often be heard to end in a sharp clap. It is advisable to listen to the first sound away from the sternum as it may become altered by the bony conduction. The length of the sound is judged by carrying the stethoscope in that way successively between those points. It will be given most correctly as one approaches the area on the right near the left edge of the sternum. Although the traditional mitral and tricuspid areas are to be retained for examining the valves, these areas possess no significance for examining the normal first heart sound.

B is produced by the first impact of the heart almost immediately after the commencement of ventricular systole, namely, by the left lowest area of the anterior heart wall in the normal heart. This is not the anatomical apex in the normal heart, but an area of the heart wall to its right, consisting partly if not wholly of right ventricle. The tail is produced by the levering of the anterior heart wall to the right of this on to the chest wall during the continuation of the oblique movement. The anterior heart wall may be so close to the chest wall that contact is sufficiently intimate to prevent sufficient impact to produce a sound. This may be due to alterations in the shape of the thorax. A more important cause is a large heart, especially a dilated right ventricle. No sound is heard or the first sound is replaced by a murmur. The first heart sound is now said to be latent. Latency is more liable to occur in the tail alone, B being audible. This is because the momentum of the oblique movement is somewhat checked after the first impact with formation of the second fulcrum at the apical beat. Latency is more liable when the heart is beating quietly. Running across the room with resulting more energetic contractions tends to bring out a latent tail. Latency, when present, is more evident as a rule when the individual is lying down than when he is standing. This may be due to less energetic heart action, but the following observation seems to show that the spatial relationships between the heart and thoracic wall may perhaps have a bearing.

The presentation of the fetus in a Japanese *multipara* was transverse in the eighth month, the child lying high up in the abdomen. At that time the tail of the first heart sound was replaced by a soft murmur whilst the patient was sitting and standing, but the first sound was normal whilst she was lying down. The presentation was normal when the patient was examined during the ninth month and the first sound was now normal when she was lying, sitting and standing.

The tendency to latency in large hearts is one reason why the first heart sound is unreliable in abnormal hearts. Another reason follows from the primary systolic phase becoming normally lengthened in hypertrophy of the left ventricle. A first sound, if not latent, may be heard to be longer than normal in this condition. However, one hardly cares to rely on the unaided ear when differences of a fortieth of a second may be significant.

The length of the first heart sound is of little or no value in abnormal hearts. Nevertheless, it is of positive value to determine that the heart muscle

is healthy in normal hearts. Given a heart which appears otherwise normal, especially on percussion, one may state the heart muscle is healthy if one hears a normally long rumbling tail, for example, "lurr" or "errur" or other modification. It is heard in practice on passing to the right of the præcordium after listening to the shorter "lur" at the apical beat. The normal length can be learned only by experience. One may gain this by first finding where the B element is loudest, following it to the left until the tail is lost and then back, past the apical beat, to the right as B grows fainter; then, finding where the end of the tail is loudest near the sternum, one follows this as it fades to the left. The heart may be healthy if we can only hear the whole first sound after overcoming latency by change of posture, by a short run or by other means. It may still be healthy although we cannot overcome latency. The inadequacies of the first heart sound as a measure of the health of the heart muscle may be overcome by means of the primary systolic period of the cardiogram.

The Primary Systolic Period of the Cardiogram.

The cardiographic primary systolic period commences at the beginning of ventricular systole and terminates at the C point. The right anterior ventricular wall tends to push the soft tissues of the chest wall forwards until the termination of the oblique movement. However, extracardiac negative pressure due to ventricular systolic shrinkage tends to draw these tissues inwards at the same time and after the oblique movement ceases also. The C point thus tends to become sharply demarcated, the polygraph pen being drawn downwards immediately after the termination of the primary systolic phase. Negative pressure exerts little influence at the apical beat, but it tends to damp cardiographic points completely the further away it is from the beat. The significance of this factor may be demonstrated by its comparatively little influence in cardiograms near the sternum from patients with bulging right ventricles as in some cases of mitral stenosis. The form of the cardiographic tracing during the primary systolic phase follows many patterns, being a compromise between these two factors. The C point is found best as a general rule by the circular receiver more or less overlapping the right edge of the apical beat.

When the patient is sitting or standing normally upright or lying on the back symmetrically in bed, the left ventricle does not come in contact with the chest wall in the normal heart. However, tracings from the left ventricular wall may be obtained at times in cases of left ventricular hypertrophy, with the patient in those positions. The receiver is placed to the left of the apical beat at about the "four o'clock" position. The ventricular mass was moving towards the polygraphic receiver when this was held on the right of the apical beat. But with the receiver over the left ventricular wall to the left of the anatomical axis, this wall tends to move away from the receiver not only because of the oblique movement of the heart as a whole, but

also because of the intrinsic contraction of this wall towards the axis. It is not to be forgotten that a virtually passive anatomical apex, in area smaller than that of the receiver, lies between right and left sides. The equivalent of the C point is inverted in left-sided cardiograms with periodic incidence the same as the upward C point in right-sided cardiograms from the same patient.

C point determinations require the greatest accuracy. It is necessary to note differences of 0.025 of a second and this may be represented by 0.4 millimetre (one-sixty-fourth of an inch) on a tracing taken by Mackenzie's ink polygraph. I have had no experience with the more rapidly moving Jacquet's instrument. The ordinates must be fine and long enough at both ends of each tracing to extend above and below all waves both in the cardiogram and in the arteriogram. The ordinates must be marked naturally, the pen not being touched by the hand or anything else, but moved up or down by pressure at the chest and wrist respectively. The tracings should be short. The roller should be moving at maximum speed. Several of these short tracings should be taken for verification not only in the one position, but also with the receiver in another position. Only right-sided tracings are taken as a general rule. If possible, take tracings on the left side also. Occasionally one can obtain only poorly demarcated right-sided tracings even in the sitting posture; this may be due to obesity. Verification of the primary systolic phase may then be made by tracings in the left lateral position, but care must be taken to see whether such tracings are left-sided. Should curling of the paper occur from a draught or should the paper not run smoothly over the instrument from any other cause, that tracing must be cancelled immediately. Compass points are useless to interpret the C point. I use the straight edge of a piece of paper, transparent for preference and better still with parallel lines, but care must be taken that these are parallel to the margin of the paper. Select only tracings with unbroken lines between long, thin ordinates at both ends. The time incidence of both ordinates are marked first on the straight edge with a fine pen or sharp pencil and then the beginning of each radial beat. The latter may often be determined better by holding the tracing upside down. In making marks on the straight edge the given point on the tracing must just meet the margin of the paper, the straight edge being moved up or down as necessary to mark off each cycle. At the same time, not only must the marks on the straight edge corresponding to the two ordinates be kept coincident with the appropriate ordinates, the pen describing an arc which may slope considerably, but the straight edge must be kept scrupulously parallel with the time marker line. It is wiser to interpret only tracings with a straight time marker line. After the beginning of each radial beat is marked, the beginning of each ventricular systole is marked by transferring the straight edge to the time marker line. The speed of the instrument may have varied, so it is essential to choose always the one-fifth of a second corresponding to each cycle respectively. A mark is thus

made corresponding to 0.2 of a second in the front of each radial mark on the straight edge. This is then placed on the præcordial tracing. In right-sided cardiograms from normal hearts the C point is easily recognizable as a conspicuous point between the two marks, constant in time incidence, nearer the latter mark. It is marked on the straight edge for each cycle. Its periodic incidence is measured by again comparing with the appropriate intervals of the time marker line. If the C point be not easily distinguished, all points occurring about the first 0.2 of a second are marked on the straight edge. If only one mark in each cycle has a constant periodic incidence, this is the C point. It is generally the most conspicuous point, but one must be on one's guard against a more conspicuous point which sometimes occurs before the C point in some large hearts. The latter may then be mistaken for the C point. I have not investigated this point fully, but it seems as a general rule to be inconstant. If it be proved to be always so, it seems that it is due to the fact that extracardiac negative pressure is supplemented by regular fluctuations of the general intrathoracic pressure. As far as I have gone, it seems that the C point can always be identified if care be taken to accept only points with constant periodic incidence and if comparisons are made in tracings taken from several parts of the præcordium.

The primary systolic phase is no fixed category. It becomes lengthened normally in hypertrophy of the left ventricle. I have not yet had the opportunity of witnessing a long primary systolic phase of hypertrophy shorten with ill health, but theoretically it should do so. The normal in the normal heart may be 0.13 of a second, but 0.13 of a second would be pathological in a hypertrophied heart in which the primary systolic phase might have been near 0.2 of a second when healthy. The primary systolic phase is only a working hypothesis in the experimental stage. Very extensive experience over lengthy periods is necessary before dogmatic rules can be formulated. In any case the use of the category must be balanced by consideration of other clinical findings, especially from percussion and of the estimated cause of any alteration of the size and shape of the heart, for example a valvular lesion or a present or possibly previous high blood pressure. Obscurities also await investigation, such as other points, the bearing of ventricular preponderance and the modifications, if any, in tachycardia.

Dilatation of the Heart.

The primary systolic phase as a measure of the health of the heart muscle leaves dilatation out of consideration. But this phenomenon is commonly associated with heart muscle failure. But it is not constantly so and further, dilatation may occur without serious affection of the heart. What is its significance? Fano observed long waves of varying tonicity superimposed on the shorter contraction waves in the auricle of the tortoise. Moreover the former stopped first. Busquet and Tiffeneau⁽⁶⁾ in 1914 reported similar oscillations in the rabbit's ventricle after removal of the heart. Starling⁽⁷⁾

propounded the law that the amount of work performed by a heart muscle fibre varied directly with its length. He demonstrated in dogs' hearts that the heart dilates for the purpose of increasing the force of its contractions either to cope with an increased arterial pressure, the same volume of blood being continued to be pumped forward or to pump out the extra quantity of blood supplied by an increased venous filling. Piper, Patterson and Gesell have confirmed this. Etienne,⁽⁸⁾ using radioscopy in seeking for an efficiency test, reported changes of volume of the heart chambers as a result of mechanical stimulation of the skin. He also stated that ventricular enlargement may be prevented in these reactions by a preliminary injection of atropine. Loeper, Wagner and Dubois-Roquebert,⁽⁹⁾ using the orthodiagraph in seeking for an efficiency test, described changes of volume after adrenalin injections in what they called "hyposystolic" hearts. They incidentally reported that changes occur in the normal heart, even at times a slight reduction of volume. Clinicians,⁽¹⁰⁾ using X rays, disagree concerning alterations of volume with effort. Whilst some, like Mackenzie,⁽¹¹⁾ state that there is no alteration, some state that the normal heart dilates and others state that it becomes smaller. Michell⁽¹²⁾ described a "normal behaviour" of the apical beat in well-trained university athletes whilst training in the daytime, namely a diurnal shifting to the left and a nocturnal return to the right. Further, he stated that it remained in the outside position when the heart became "strained" and regained its normal behaviour only as the heart recovered. One may assume with a fair degree of probability that the shifting of the position of maximal pulsation was due to dilatation. Dilatation certainly seems to have a physiological significance at any rate at times.

The problem of acute dilatation will still place us in a clinical dilemma, if we regard it as physiological sometimes and frankly pathological at other times. Many modern cardiologists seem to tend towards the view that all manifestations of acute dilatation are essentially the same, namely fundamentally physiological. The time seems ripe to take up this position dogmatically and to allow future experience to confirm or refute it.

The living organism possesses defence reactions, such as inflammation. Inflammation draws our attention to the presence of a pathological state, but it itself has a physiological significance. May not dilatation be a similar phenomenon invariably? Inflammation may get out of hand; abscesses if not drained may cause vital mischief. Dilatation may get out of hand at times requiring relief by venesection. Inflammation may lead to irreparable damage. Dilatation may leave a new "set" which has to be compensated in turn by hypertrophy. The dogmatic standpoint is that dilatation invariably is a physiological phenomenon the function of which is to compensate stress on the heart muscle. Its presence indicates either present or past stress either on the heart muscle directly or indirectly on this by direct stress, as will be exemplified later, on the neuro-

circulatory apparatus. The latter mechanism is important in connexion with the diagnosis of the neurotic heart.

Comparative anatomy supports this view. Phylogenetic selection implies a useful purpose. Keith⁽⁶⁾ states that the apex of the tortoise's heart is anchored to the pericardial sac to obtain a fulcrum for the axis during ventricular contraction. This has been replaced by a movable apical fulcrum in the more active mammals. The purpose of this change would seem to be for dilatation.

Acute dilatation may be observed clinically apart from heart disease, for example in cerebral apoplexy and in some cases of epilepsy. I have also witnessed it apparently caused by nothing else but dissociated fear in a patient with cardiac neurosis.

The following case will be further described later.

The patient was a returned soldier suffering from anxiety hysteria, the dissociated affect being fixed to the idea of his heart. The condition was severe enough to have caused the patient to remain three years in hospitals labelled as suffering from 100% disability when I commenced psychological treatment. He had been afraid to exert himself. Within a month he was discharged, his pension was substantially reduced, he became permanently employed at once and he began to play football which continued regularly throughout the ensuing season. His heart, although larger than normal, was obviously healthy. During the suspense of cardiographic examinations, the position of maximal pulsation could be observed to move an appreciable distance to the left. I can ascribe no cause for this except dilatation. The fundamental cause of the dilatation was excitation of his dissociated fear complex. I cannot say whether this acted indirectly through a rise of arterial pressure or directly through a dilator innervation.

Starling has postulated the presence of the latter. But one gains the impression that dilatation may perhaps be associated with the other bodily concomitants of fear and rage.

I was careful to define the cardiac muscle as healthy in the neurotic heart, but not necessarily of normal structure. The above case also illustrates this distinction. The primary systolic phase was 0.2 of a second; hypertrophy had become developed. No cause could be found for this except dilatation. As his fear complex was frequently excited unwarranted by the environment, it may be assumed that dilatation often occurred also.

Physiological dilatation implies a definite system. It might be called the tonic system. The terms "tonicity" and "tone" have been confused in the past. "Tone" has been used indiscriminately to mean either tonic or health (of the heart muscle). Owing to this association the latter is better not described by the word "tone." Besides efferent nerves there may perhaps be afferent nerves also. If so, another theory concerning the production of *angina pectoris* may have to be considered also. Angina has been said to disappear with the onset of dilatation. The last hours of a patient with beriberi are made terrible by epigastric pain. Starling has shown that a heart which is failing as a result of experiment can be given successive new leases

of activity by successive slittings of the pericardial sac, permitting greater and greater dilatation. The beri-beri heart becomes very dilated. May not the agonizing pain near the lower end of the sternum be due to further dilatation becoming prevented? A cardinal symptom in *angina pectoris* is a feeling of constriction. It may be that one cause of *angina pectoris* is a want of harmony between the neuromuscular mechanism of dilatation and the necessities of the circulation.

The Instinct of Docility.

The treatment of a neurotic heart is the treatment of a neurosis. Bodily illness may be and often is the excitant of neurotic symptoms. Any such as malaria, a septic focus *et cetera* requires attention first. But the foundation of a neurosis is psychological and, I believe, acquired. Treatment must therefore be mainly psychological, whether by suggestion, analysis, persuasion or occupation. Simple suggestion may be all that is necessary, especially so in patients in whom suggestion produced the heart symptoms. But simple suggestion is usually supplemented by some explanation however simple. Besides occupation the commonsense method of treatment in my opinion is by persuasion as practised, though not necessarily as explained, by Dubois.⁽¹⁶⁾ Not clumsily but with considerable finesse one attempts firstly to convince the patient of the manner of his illness and secondly, to give him a new point of view. The main requirements in the physician are commonsense and patience, but the deeper his knowledge of psychology, the better will be his results. Unfortunately, our knowledge of psychology is very imperfect. At the present day, therefore, persuasion is generally supplemented, as opportunity offers, by suggestion or especially to gain insight by some form of analysis. Opportunities may arise at any moment and not necessarily during psychological treatment.

A middle aged man of psychotic stock had suffered from a severe nervous headache at least once a week for years. He contracted enteric fever. The headache of onset was unusually severe. He became very delirious afterwards. When he began to return to a state of more normal consciousness, I noticed his dull eyes light up as I entered his room. About this time he remarked, "I have no headache now." I immediately answered, "And you are not going to have any more of those bad heads, X." He had two headaches during the next six months.

A young Malay was diving without a dress in seven fathoms. He came to the surface rapidly after apparently becoming frightened by something. Next morning he awoke with a simple tic. He jerked his head sharply from one side to the other at frequent intervals. Taking him into the tropical sunlight, I examined his ears with a head mirror which I then took off. I said to him, "Do you think I can cure you?" He answered, "Yes, with that," pointing to the mirror. I at once replaced it, focussed a hot beam of light on to his ear and said, "You are better, go back to the ward." The tic departed. The superficial nature of cure by suggestion is exemplified also in this case. I informed his employer the spasm would return if he sent him diving again. He made him clean the bottom of a boat in the water a week later. The tic returned. I saw him within twenty-four hours, took him into the sunlight and flashed the head mirror at his ear. The symptom ceased again.

Crude suggestion is inadequate. It affects symptoms only. The roots of the neurosis, as is well known, are not touched.

A form of analysis may be useful in helping to gain insight.

The returned soldier mentioned when discussing dilatation was blown up and buried twice. A week after the second occasion, he helped to convey some French wounded to a dressing station and he fainted there. He regained consciousness after a few days in London, but was blind. This was cured six months later after he fell down the hospital stairs when sleep-walking. He also had had an hysterical monoplegia. When he came under my care three years after the onset, he was a hospital patient still labelled as suffering from "effort syndrome" with "100% disability." The symptoms he first described were frankly cardiac. It came out only later that his main symptom was recurrent unconsciousness which was followed by exaggeration of the pain in his chest and the feeling of dyspnoea on exertion.

I saw him in one attack. He had fainted suddenly. Unconsciousness soon merged into a semiconscious state which gradually wore off in the course of a day or so. He was orientated, but possessed almost no power of attention, only reacting to external stimuli by expressions manifesting great fear; he would start with staring eyes at the slightest sound. The clinical picture was as if he were dominated by the "instinct of escape."

He was afraid to walk much and had not run since his invalidity. There was little improvement after a couple of weeks' daily persuasion. He could not be convinced that his "heart" symptoms were due not to a bodily cause but to dissociated fear. After reviewing the circumstances of several attacks of unconsciousness, I selected one which occurred whilst he was waiting for a train and asked him to visualize what happened just before. After considerable manifestation of that phenomenon which Freud terms "repression," he remembered that a train had whistled. I asked him to associate to "whistle." After I had repeated the word several times and he had as often asserted that he could think of nothing, his eyes suddenly took on a far-away look and his expression denoted fear. I told him sharply to say what was passing in his mind. He pulled himself together, saying, "The whistle of a shell." He had fainted on the only two occasions he had attended church, one of these being the attack already described. He associated the circumstances at a later date. After very considerable "repression," he remembered that he fainted about the time the creed was recited. On making him recite this, he became very agitated as he approached the word "buried," but he overcame this dissociation successfully also. No attempt was made to associate his heart symptoms with the fear complex. The preliminary persuasion was sufficient to suggest now that his condition was just a neurosis. Permanent employment being available, he was discharged soon after he became aware that his symptoms were the result of dissociated fear and he began to lead a normal active and happy existence. But even so, his after history shows that the foundations of the neurosis remained still. His employment took him alone amongst uncivilized natives a year after his discharge. He was surprised one day by a band of them and he felt a sudden pain over his heart. Although he "carried on," he was anxious enough to see me when he returned. To my chagrin, I had to explain to him that it was the same old fear.

Why should the fear of active service associations be "repressed" in cases like this, whilst many persons who underwent greater stress did not develop a neurosis? One might answer that there is also a complex of exaggerated self-esteem. But this merely calls for the question: Why should a conflict of complexes arise? There is apparently a still more fundamental aspect of the neurosis. Before we can understand the basis of psychopathology, we must

first understand the basis of normal psychology. Most psychologists accept Freud's general principle of the psychogenetic determination of hysteria some time during immaturity, along with Janet's conception of dissociation. But the majority will not tolerate Freud's view that the source of human striving is the reproductive instinct.

It is McDougall to whom we owe the placing of the science of psychology on firm foundations. In defining the instincts and their psychological perspective, he is the first to give a consistent theory of the motive force behind all animal feeling, thought and action. Capacity for purposive action resides in the primary instincts each of which is accompanied by its own peculiar emotion. Intelligence, manifested by adaptability to circumstances, is but the capacity to improve on these inborn or native instincts in the light of past experience and it works always in the service of some conation springing from these tendencies. In other words, the degree of the development of the intelligence is but a measure of the extent to which the instincts of an animal may become modified by experience in order to cope better with the environment. The primary instincts are limited in number, but this and the nature of some is not yet clear.

McDougall points out that the sexual instinct, as accepted by the Freudian and associated schools, is not a single instinct. He divides it into two instincts quite distinct from one another, namely, the parental and the mating or sexual instinct. But I would suggest a further division, into four instincts. There is parental love and there is the carnal brand. But there are two other kinds. The love a child shows for its guardian possesses a quality which exists in no other form, namely trust. The basis of this I have called the instinct of docility. Fourthly, there is that form of sympathy which draws an individual to those like himself. This is due to a feeling of agreement of personality, of identity of affection which is in my opinion the emotion of the gregarious instinct. McDougall considers the emotion of this instinct to be loneliness. Loneliness, I think, is but the appetitive aspect of the herd instinct; the lonely animal longs for his kind. But the feeling experienced is identity, when the instinct is stimulated by the presence of an appropriate object, namely an individual of the same kind. If this view be correct, it has considerable clinical importance. Aversion directed towards an object which had previously become an object of the gregarious instinct (assuming this possesses the emotion of identity of affection) would seem to be a possible source of mental conflict.

The mating or sexual instinct is obviously a factor in some hysterical symptoms. But such obviousness is no criterion that it is the main let alone the only instinct involved. The whole personality is affected in the hysteric, the psychasthenic and the psychogenetic psychotic. Contrast with the normal seems to demonstrate that these are but failures of adaptation to the social environment. Those instincts which are important in social adaptation, would

seem to be those which are of importance in these diseases. Confucius pointed out the strength of lust (sexual instinct), of strife (instinct of combat) and of greed (instinct of acquisition) at the different stages of a man's life and each implies the strength of self-assertion also. The strength of fear and of food-seeking is also undeniable and even of "repulsion" (a very primitive instinct which I think is responsible for the phenomenon described as "repression"). Strong as these phylogenetically older instincts are, observation of moral imbeciles (so-called) seems to show that they are not the instincts from which the phylogenetically newer social harmony is derived. Observations of normal and abnormal behaviour seem to show that the instincts responsible for social harmony are the parental, the docile and the gregarious instincts. I believe these are the instincts upon which we should concentrate in the understanding of the neuroses and the psychogenetic psychoses.

The nature of sympathy suggestion and imitation is not yet clear. This kind of sympathy is not the passive feeling of identity of personality I have already ascribed to the herd instinct. It is the active transference of dispositions and moods which has the same relation to feeling that suggestion has to ideas and imitation to action. Suggestion is a normal attribute. Normal suggestibility is exemplified in the character of Miranda especially in the second scene of "The Tempest." The presence of either sympathy suggestion or imitation in an individual (the subject) implies the influence of another individual (the object). That the active force is not in the object but in the subject is exemplified in the case of suggestion by the following incident:

I was about to give ether by Clover's inhaler to a Torres Strait native with a crushed hand. On placing the inhaler without a bag over his face, I said: "You are going to sleep." Almost at once he had a sort of fit. Being alarmed, I immediately removed the inhaler the pointer of which had never left zero. He soon lay quiet with eyes closed. His reflexes were normal. Realizing he was hypnotized, I told the operator to proceed. Without the inhaler being replaced, he removed the thumb and inserted several stitches. The only movement the patient made was to screw his eyelids tightly together when the metacarpal bone was cut in two. As soon as the operation was over I tapped him on the chest and told him to get up. After glancing at his bandaged hand, he serenely walked over to his ward at once. Nothing was further from my mind than hypnosis when the fit occurred and I knew nothing about suggestion at that time.

Trotter attributes sympathy suggestion and imitation with many other tendencies to the herd instinct. McDougall points out the passive nature of this instinct. McDougall's arrangement of the instincts in his classic work "Social Psychology" is somewhat modified in "An Outline of Psychology." "An Outline of Abnormal Psychology" is not yet to hand. But it seems clear that he does not regard sympathy suggestion and imitation as belonging to any one particular instinct. He describes a special association between gregarious animals and the kind of sympathy now being discussed. He also describes an instinct of "submission (or self-abasement)" the ascribed emotion being a feeling of "subjection (of

inferiority, of devotion, of humility, of attachment, of submission, negative self-feeling)" and the conative trend being to mollify, to avoid attracting attention. He regards this instinct as complementary to the instinct of self-assertion. He recognizes the disposition of this instinct to be "humble, meek, submissive or docile." He also recognizes both that it is brought into play in all forms of personal influence and its importance "in association with" sympathy suggestion and imitation in the development of the individual and of society. His description of the so-called instinct of submission lacks conviction; he does not take into account the positive urge associated with the feeling of helplessness. McDougall seems to recognize this deficiency. Not only has he added another instinct in his later work, namely the instinct of appeal, but he also states:

It is a nice question whether the training of a dog can be achieved without evoking fear on one or more occasions. My own experience inclines me to suppose that it cannot. . . . But it is doubtful if the appeal to fear alone could succeed in training the dog to be a useful companion . . . the impulse of fear is inhibitive and prohibitive; but docility comes from the submissive instinct . . . can be trained to a degree which is limited only by their intelligence.

I would suggest an entire reconstruction of that part of the theory of the instincts which concerns submission, docility, helplessness and suggestibility. To this end, I have postulated an instinct of docility, taking the term from Herrick who recognizes the importance of docility in the development of the individual. The derivation of the word makes it mean "ready to learn" and the biological purpose of the instinct is to acquire the acquired experience of the race. Its emotion is a feeling of dependence and its conative trend is to follow. It is a frankly selfish instinct. The sense of social responsibility and all altruistic traits, as McDougall points out, arise from the parental instinct, which, as aforementioned, he has shown to be quite distinct from the mating instinct. I believe the parental instinct is the source of insight and its use is a fruitful means of treatment if it can be stimulated without also stimulating conflicts. The instinct which is complementary to the docile instinct, is not the instinct of self-assertion, but the parental instinct.

The theory of evolution implies two things. Firstly, species become modified either by accident or by virtue of a primordial purpose to overcome the environment. I believe the latter. Secondly, survival of the new species is determined by selection. As McDougall points out, a species is most completely characterized by its instincts and evolution of the animal world is primarily a process of differentiation and specialization of instincts. Those instincts have survived which by some biological advantage have served best to cope with the environment and promoted the survival of the species. In the lower animals, the instincts are more machine-like, whilst the ability to profit by experience is slight. But the higher animals are more able to profit by experience, the instincts having become more adaptable. But nature has pro-

gressed further still. The highest forms of animal life possess a greater economy of effort in that they are able to profit by the experience of others. This achievement became possible by the evolution of the instinct of docility. Striving is fostered by need. The stimulation of the docile instinct in Nature is carried out by a period of immaturity having become evolved. The young animal became still dependent on the parent for food and protection after birth. The previously evolved gregarious instinct was inadequate for the purpose of making the animal strive to improve his capabilities by example. (Precept is notoriously but a weaker derivative of this.) The gregarious instinct is satisfied when the animal remains and by the animal remaining with his fellows. The urge resulting from the feeling that the individual is not self-sufficing was not continued whilst the animal remained with the herd. The evolution of the docile instinct supplied this deficiency. The gregarious along with the parental instinct is highly developed in some of the highest insects, but the period of immaturity is practically over when the young bee, for example, emerges into the world. But immaturity alone was still inadequate. The object required to be more definitely focussed on and by the subject. Nature achieved this in the mammal. The development of the parental instinct and altruistic traits in some forms of bird life is sublime, but the indifference of the cuckoo's foster-parent to its ejected offspring and its continued care of their surviving murderer seems grotesque. The degree of development of the docile instinct in Nature seems to have a direct relationship to the degree of dependence at birth. The most helpless animal at birth is the strongest at maturity.

The appetitive aspect of the docile instinct is excited by helplessness with in the child the need of a provider and protector. The immature animal strives to share the life of a stronger individual of the same species in order to obtain food and care. The conative urge towards the object is to follow. When this instinct becomes excited by the presence of an object, the subject tends to follow her in every way. He follows her actions (imitation). He follows her ideas (suggestions). He follows her dispositions and moods (sympathy). By this achievement of Nature man by sympathetic transference of the dispositions of his elders is able to acquire the accumulated wisdom of his forebears. When man acquired the power of speech, sympathy became specialized as suggestion.

McDougall points out that confidence is a derived emotion resulting from the successful striving of any instinct. The adequate object of the docile instinct is one who exhibits parental interest and action towards it. Should such an object be attained and continue satisfactorily, a feeling of confidence results as with the other instincts. However, owing to the peculiar nature of this instinct a special form of confidence results at the same time, namely confidence in another—faith.

In the present state of our knowledge psychological theories are necessarily guesswork and this

is especially so in their pathological bearings. Their truth can be judged only by experience. Patient observation and statistics from birth to well into adult age is necessary and this is mostly the province of the family physician. The pathological bearings of the instinct of docility are complicated, not only because of its own peculiar complications, but also because it acts in Nature in close association with both the parental and the gregarious instincts.

The following mechanisms may be the source of complexes and conflicts with the production perhaps of future dissociation. Owing to the gregarious instinct the subject feels identity with his fellows and brethren. Anger, scorn, contempt or intolerance directed against such objects is incompatible. Such attitudes are also incompatible with the objects of the docile instinct, but the results are complicated further. The individual who supplies food and protection, becomes an object of this instinct. The overbearing, the selfish or the overanxious parent is not uncommon. Should the object of the instinct of docility prove inadequate, the subject tends to turn away to seek satisfaction elsewhere. If food and protection continue to be supplied by the original object, the instinct of docility is in the position of denying an object it holds whilst it is seeking another. This I think is the source of the fool, his wayward goals and his credulity. The derived emotion anxiety is produced by the unsuccessful striving of any instinct, including the docile and herd instincts. In the case of the former a special form of anxiety results peculiar to it, namely doubt of another. Anxiety stimulates the instinct of escape and so dissociated fear from an apparently mysterious source may appear at some future date. Dispositions concerning the other instincts including the parental and gregarious instincts are normally laid down in the child's mind by sympathy acting through the docile instinct. The above mechanisms may become complicated by abnormal points of view being passed on to cause further conflict as the horizon of interests becomes wider. As man matures the docile instinct becomes attached to general social objects and these may become involved in a dissociated complex. I hold the tentative opinion that the object of his employment may thus become involved, resulting in the loss of interest and of concentration with which we are familiar in psychasthenia.

These generalizations are of no value in treatment at this stage of knowledge. They but serve to round off an outline of the docile and herd instincts which, I think, are the instincts of importance in the ætiology of psychogenetic diseases. When disharmony occurs in a child's development, the phylogenetically older instincts tend to run riot. These are then more obvious to the beholder. The important factors in the cure of a neurosis may likewise be the least obvious. For example, many patients with cardiac neurosis, as well as other forms, still frequent our pensions hospitals. At first sight, they seem to the inexperienced to be the same

as the case described in this paper. However, many are fundamentally different. He wanted to get better. This is the first desideratum in the treatment of anxiety hysteria. Then, after attending to bodily ill-health, the physician should, in my opinion, direct his attention to the psychological aspect. An attempt is made to persuade the patient that his illness is of the mind and not from bodily causes; but at the same time hope of cure must also be inculcated. The hypothesis of dissociation has been proved by use to be of undoubted value. Its nature is explained. A useful method of gaining insight is to let the patient talk and to watch for contradictions resulting from dissociations, not necessarily occurring on the same day. As soon as he makes the contradiction, the exact words of the first statement are repeated to him. The certainty that he has full control of his thoughts now becomes shaken. This is the time to hammer home arguments that his illness is psychological. Hand in hand with attempting to gain conviction that the illness is a matter of dissociation, one tries to persuade the patient that mental conflicts can be subdued indirectly by shifting his point of view. This is Dubois's main thesis and I attempt to follow him in his methods. Persuasion to a voluntary reduction of pension is a useful means of treatment in pension cases. Change of environment may be necessary to break a vicious circle, but as soon as the patient can stand it, the best treatment in my opinion is occupation and the resumption of his natural responsibilities.

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DYSPEPSIA.¹

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WHEN I was asked if I would give a British Medical Association lecture on dyspepsia to your Association, I thought only of the honour. I did not think of the title except that it was a term meaning difficult digestion. I have always looked upon the word as a term to cover all sorts of vague symptoms of stomach disorders, a useful word which had a niche until a more definite name could be given to a condition. Apparently we use the term as we use the words rheumatism and influenza—in a generic sort of way to cover a multitude of pains and pyrexias for which we have no special name. But when I sat down to write a connected paper, I found that I had to be more definite and discriminate in some way. I have decided then to describe this as a derangement of stomach function (apart from structural disease) accompanied by discomfort in the organ during the process of digestion.

I have tried to keep this paper, as far as possible, to the effects of improper diet as the cause of dyspepsia. It is almost impossible to prevent oneself wandering into byways when one feels as strongly as I do that stomach function is so greatly influenced by the normal functioning of every other system of the body. So if I seem to attach little importance to the thousand and one large and small causes of abnormal stomach function, it is not because I do not give them due regard in the causation of dyspepsia, but because of each and all a separate paper might be written. I wish to emphasize that it is our duty before coming to a diagnosis of simple dyspepsia, such as I am endeavouring to describe, to be sure at first that there is no underlying organic cause and if so, the cause should be treated as well as the indigestion which in such case is but a symptom.

After twenty odd years' experience in dealing with a condition in which one is particularly interested, one cannot but reach some more or less definite opinions on the subject, especially so when one thinks that one finds much support of one's ideas by the trial and error method of treatment.

It sounds a platitude to say that it does not matter so much what is eaten as the way it is eaten. This is my text. I will make the further assertion that carbohydrate improperly presented to the stomach is the cause of infinitely the greatest proportion of stomach derangements and that protein is responsible for comparatively few.

Before going further, I should like to remind you briefly of the physiology of stomach digestion. First, comes mastication and insalivation of food and

I have no hesitation in saying that inefficient mastication and consequent absence of insalivation of food is responsible for far and away the biggest percentage of stomach disorders of all kinds, notwithstanding that Bennett thinks of the saliva as being useful mostly for its mechanical attributes.

The insalivation of protein is unimportant, but the importance of the salivary digestion of carbohydrates cannot be over-emphasized. I need only remind you that the ptyalin of the saliva very rapidly converts starch into maltose. For instance, MacLean mentions the experiment of insalivating five grammes of bread for one minute and finding 14% converted within that time. It acts efficiently only in an alkaline or neutral medium. The enzyme is killed in a very weak acid dilution and it acts much more upon boiled than unboiled starch. When the food enters the stomach, it is retained in the cardiac end of the organ, the lower layers gradually passing into the pyloric portion, where churning of the contents with the then stimulated gastric juice takes place. From time to time the pyloric sphincter relaxes allowing discharge of the liquefied material into the duodenum. The cardiac end of the stomach, the walls of which are in close contact and exert a slight pressure upon its gradually decreasing contents, may be likened to a reservoir; the pyloric end to a churn. There is a gradual permeation of the contents with gastric juice, which in one-half to three-quarters of an hour has quite stopped any further action of the ptyalin.

So far there are no two opinions as to the process of stomach function. There is not the same unanimity of opinion with regard to the cause of the contraction and relaxation of the pyloric sphincter. All observers are united in the opinion that hard particles of food coming in contact with the sphincter tend to its contraction and liquid food favours relaxation. Cannon's theory is that when free acid appears in the pyloric contents, the sphincter relaxes and allows the passage of the acid contents into the duodenum and the acid acting upon the intestine causes the sphincter to contract and remain contracted as long as the duodenal contents remain acid. This theory does not account for the fact that in *achylia gastrica* the sphincter relaxes readily.

Cannon's view of the acid control of the pylorus has been combated by many observers from radiographic evidence to the contrary and from the analysis of synchronously intubated gastric and duodenal contents; Carlson showed that alkaline stimulation of the duodenum also produces pyloric closure.

MacLean says in his "Modern Views of Digestion and Gastric Diseases": "Latterly it has been proved without doubt that the regurgitation of alkaline intestinal juices into the stomach is part of the process of digestion" and later on "the idea of regurgitation is a comparatively recent one and its importance in stomach physiology and pathology has as yet hardly been appreciated." He advocates the view of Boldyreff, Carlson and Cathcart that

¹ A British Medical Association lecture delivered before the Central Southern Medical Association, New South Wales, on September 10, 1926.

acid injected into the duodenum causes in it peristalsis of alkaline juices sufficient to lower the acidity of the gastric contents to the normal—that is 0.15%. Apperley has recently suggested that a certain osmotic value of the chyme must be reached before the duodenum will accept it.

Ryle favours the view of an alternating intragastric and intraduodenal tension and relaxation.

These are but some of the many theories to explain the part played by the pyloric sphincter, but no doubt exists as to the fact that hard particles or lumps do cause a contraction with consequent hypersecretion.

I do not intend to concern myself with the chemical action of the gastric juice or enzymes upon the different classes of foods, it is immaterial to my thesis. It is, however, an accepted fact that carbohydrates leave the stomach quickly in comparison with protein and that fat delays the secretion of hydrochloric acid. It at once occurs to one that the reason for this to some extent is that carbohydrates are more readily reduced to a fluid consistency than the proteins (as usually taken), but all clinicians know from experience that lumps of food, whether they be carbohydrates or proteins, are often found in the vomitus and in stomach lavage, especially uncooked carbohydrates, and we cannot doubt that they have led to the hypersecretion and discomfort or pain usually present.

Radiology has taught us much concerning the shape, position and motility of the stomach in its normal and pathological states and the motor functions of the stomach are of as much importance as the secretory functions and intimately connected with it. We know how widely the stomach varies in position and behaviour in the same individual under varying conditions of health and that low or high stomach, small or large, is quite consistent with normal functioning. The fractional test meal and Rehfuß tube has been just as useful or more so in gauging the stomach motility and stomach secretion. Probably it is a more reliable guide than the barium meal, the weight of which introduces a factor which in some conditions of hypotonus causes delay.

Stomachs are now classified into orthotonic, hypertonic and hypotonic in denoting their motility and according to the secretory function, as estimated by the fractional test meal, into normal stomach, hyperchlorhydria and hypochlorhydria. Hypertonus and hyperacidity just as hypoacidity and hypotonus are usually found together, but not necessarily so; as, for instance, in atony of the stomach there may be hyperacidity or anacidity. Further, hypertonus and hyperacidity are usually accompanied by a rapid emptying of the stomach. The converse applies to the state of hypotonus and hypoacidity. Clinicians think of the hypertonic condition as being usually found in the active, vigorous, muscular type, as well as the nervous, lean, fidgety individual; while hypotonic condition is found in the weakly, sedentary and the long chested, viscerotonic person. Carman, from the experience of his radiological findings, says: "The

tonus of the stomach is to be judged more from its correspondence with the habitus of the individual than from the size, form or position of the stomach."

The fractional test meal and Rehfuß tube have also taught us not to confuse hypersecretion and hyperacidity and not to think that hyperacidity leads to rapid emptying of the stomach or hypotonus to delayed emptying, for we know that the most rapid emptying occurs in *achylia gastrica*, probably on account of the atony of the pylorus. Still, there is no uniformity of opinion as to what should be called hypersecretion. Hutchison says: "The terms hyperchlorhydria and hypochlorhydria are synonymous with hyper- and hyposecretion."

MacLean says that hypersecretion is an increase of the gastric acid produced. It may or may not be hyperacid.

Bennett says that it is quite wrong to suppose that gastric juice in hypersecretion is hyperacid.

There is much work being done on the nerve supply of the stomach in relation to its motility and secretion. I shall say no more concerning it than to remind you that the vagus is the motor nerve of the stomach and Pavlov has proved that it is also the secretory nerve. The sympathetic has an inhibitory action.

Bennett and Ryle examined the gastric functions of one hundred healthy medical students and summed up, to use Ryle's words: "The important conclusion to be drawn from these observations is that neither hyperchlorhydria nor achlorhydria can in themselves be regarded as pathological findings." Numerous experiments conducted since by other observers confirm these findings. And so we arrive at the conclusion that what is normal secretion and tonus for one person is abnormal for another. An individual may have an exceedingly high or low acid content of the gastric juices and have no symptoms of indigestion. It is not yet proved that even achlorhydria is an abnormal condition. It appears frequently to be hereditary and exists in people in apparently robust health. On the contrary we cannot say that hyperchlorhydria or hypochlorhydria, hypersecretion or hyposecretion or motility are symptomatic of any disease or even structural alteration in the alimentary tract.

How then can we classify dyspepsia? Is it sufficient to say that a patient is suffering from hyperchlorhydria or hypochlorhydria, flatulence, dyspepsia *et cetera*?

MacLean in his "Modern Views on Digestion" says: "The principal forms of gastric disease may be described under the headings—hyperacidity, hypoacidity, dyspepsia of general debility and nervous dyspepsia." He summed up his article on hyperacidity by saying that the two factors at work in its production are: (i.) deficiency in the normal neutralizing process—that is by the regurgitation of alkaline juices, (ii.) continued and abnormal production of acid after digestion is over and the stomach is empty—that is hypersecretion. As the neutralizing process depends upon the tone of the pyloric sphincter, consequently the acid is a measure of the

pyloric irritability. This may be due to local structural changes, reflex causes and psychogenic factors and also the presence of solid or indigestible, irritating food. Incidentally, he mentions that removal of the pyloric sphincter spasm is necessary in treatment.

The chief symptoms of hyperacidity are epigastric discomfort, heartburn, flatulence. The discomfort and heartburn appear as a rule a few hours after food, the interval in my experience definitely depending upon the class of food taken—that is, whether carbohydrates or protein. It is always relieved by food or alkali. MacLean says it is often identical with the hunger pain of duodenal ulcer. Hutchison is emphatic in believing the hunger pain to be due not to hyperchlorhydria but to the co-existing duodenal ulcer.

And what are the symptoms of hypoacidity, the second heading?

MacLean says there may be no symptoms of hypoacidity or anacidity at all. If symptoms are present, there is a vague history of uneasiness in the epigastric region and loss of appetite.

Cheney sums up a recent article on achlorhydria by saying: "The first essential is to prove that achlorhydria exists. This can only be established by the fractional test meal. Nothing in the physical examination alone can determine the activity of the gastric secretion." Again the symptoms given for dyspepsia of general debility or hypotonic dyspepsia are "an uncomfortable sense of fullness after meals, sometimes associated with flatulence" and "the general tone of the individual gives one the clue."

And lastly, nervous dyspepsia may be a symptom of any organic lesion or gastric disease.

This classification then of the dyspepsias, as mentioned by MacLean, does not help us much. The terms used are no doubt expressive of certain conditions found in the stomach, but are not expressive of any clinical syndrome. It is impossible to label functional derangement of the stomach so as to present a clinical entity, except in a broad sense. When Leonard Williams first published his little book entitled "Minor Maladies," I was struck by his classification of indigestion into sthenic and asthenic types. I do not know whether he was the originator of the classification, but he has always had the credit of being so in my mind.

Hurst in his lecture on gastric diathesis, 1922, speaks of the "hypersthenic diathesis," thus virtually adopting the same classification. Also the terms vagotonia and sympathicotonia are expressive of the same classification, whilst attributing the hypertonic state to the vagus control and the hypotonic state to sympathetic.

We are all born with certain powers or weaknesses in our make-up. The term diathesis is expressive of this inborn make-up. Two persons may commit the same errors of diet or insult the stomach in exactly the same way and under the same conditions, the one as the other and yet suffer in quite different ways. Possibly at first the symptoms will

be the same, but the progress of the disease in the one will be of the sthenic or hypersthenic type, whilst the other will go through the stages of the asthenic. Both may eventually lead to structural disease of the stomach.

Intestinal dyspepsia, although intimately connected with and interdependent on stomach dyspepsia, is outside the scope of my paper.

McKenzie in his "Symptoms and Their Interpretation" says:

In the majority of stomach affections, there are a few signs that may be considered distinctive of any one complaint. When a diagnosis can at once be made in a given case, the patient has been suffering for a considerable time. The general practitioner is usually consulted long before any definite sign such as tumour, hæmatemesis or definite dilatation is apparent, and as the symptoms of ailments from the simplest to the most serious are at first identical, it is necessary to adopt other methods in order to arrive at a diagnosis.

I suppose that the commonest complaint with which the general practitioner has to deal, is the one of a sense of fullness or distension or weight in the stomach, not amounting to pain, felt at varying intervals after meals and accompanied by flatulence, belching relieving the discomfort for the time being. Beyond a dirty tongue and a nasty taste in the mouth variously described, there is no discomfort before the first meal of the day and sleep is not interfered with. These are the first symptoms in most patients of functional stomach derangement for which any of us are consulted. The condition may pass on to ulceration on the one hand or an atonic condition on the other, the course depending upon the *habitus* of the individual affected; whether medical treatment can influence the course or not depends upon the causation. It is not possible at this early stage to classify the symptoms as belonging to the sthenic or asthenic type. In the vast majority of cases you will find that the patient is either unable to masticate his food properly or the food cannot be insalivated if it requires insalivation. In my experience animal food improperly masticated will, owing to the lumps of solid, cause contraction of the pylorus and lead to heartburn in a few hours after meals and never to early discomfort in the digestive cycle and flatulence is never an outstanding symptom.

I should like to diverge and call your attention to the different kinds of dentition and means of mastication provided by Nature for two great classes of animals—the *herbivora* and *carnivora*. The *herbivora* are provided with an enormous grinding area and have a semi-rotary action of the jaws, a regular mill, provided for pounding the food and insalivating it. Many are ruminants. They have been provided with a storage compartment which they can fill quickly and at leisure masticate the contents. No doubt this developed in the course of ages in the struggle for existence. It was not at all an uncommon thing when I lived in the country to find when stock were turned into a lucerne paddock, especially before the dew was off the lucerne, that the cows and sheep were blown, but never a

horse. You have all seen it, I suppose. I have often asked myself why? The only difference as far as I can find is that the horse has masticated and insalivated the carbohydrate and the ruminants have not. But the horse will blow on wheat (unless it is boiled or mixed with chaff), the reason for this being then I presume that the horse cannot be expected to insalivate or masticate more than a percentage of the grain and much wheat must pass into the stomach unsalivated. The *carnivora* have spiky teeth and only an up and down chop. They cannot grind their food, but a cat or dog (I cannot speak of the other *carnivora*) is never troubled with wind unless you add carbohydrate to the food and then their presence is often very disagreeable. The human being is omnivorous. He has the molars and the lateral movement of the jaws for grinding his food and he has tearing or cutting teeth. You will find that if molar mastication is deficient, either owing to want of teeth or from mechanical inability to grind the food, the patient will suffer from indigestion of carbohydrates. Of course, this can be obviated in the preparation of food, just as it can in the horse by boiling the wheat sufficiently. On the other hand, the patient may have a complete set of teeth, but if he be given food in a condition in which it cannot be insalivated it comes to the same thing as far as the stomach is concerned.

Let me take some examples. There are very few laymen who will not agree that hot buttered scones and hot buttered toast are indigestible. The carbohydrate has sopped up the oil and masticate with the best grinders in the world as you will, the saliva cannot displace the oil and no doubt the fat further retards digestion. New potatoes and the average bananas are the cause of much indigestion on account of the fact that they descend so easily in lumps and mostly do in those with inefficient masticatory power. But even potatoes mashed in the ordinary way (in the preparation of which they are usually mixed with butter and milk) are a fertile source of bother. And yet if the potato be well cooked and mashed and not allowed to mix with anything that it can absorb before meeting with the saliva, it is the most easily digested of all vegetables.

Again in my opinion the breakfast foods help to keep Macquarie Street on the map. Some years ago I purchased samples of all the breakfast foods available and boiled and stirred them until the starch was converted. In not a single instance was one of them fully cooked in under four hours, although according to the advertisement on some of them they required only twenty minutes' cooking. These spoon foods—and most of the farinaceous foods are so prepared that they are poured into the stomach and never meet with the saliva—should be thoroughly converted in the pot for they cannot be insalivated. We generally prohibit root vegetables because they are so sloppy, but they do not cause half the bother that do the vegetables that custom has decreed shall be smothered with white sauce which is made of flour and milk. It is the white sauce that causes the bother, as we have mostly discovered. Pastry is generally taboo. Rich pastry is

carbohydrate impregnated with fat and is naturally indigestible, for the same reason as is hot buttered toast. Boiled pastry with advancing years we look at askance—it is too heavy. It is, both before and afterwards.

Then there is that delightful old saying about the apple a day. It means much to the medical profession. The apples usually favoured are the crisp juicy variety, but woe betide the stomach in which lumps of "Granny Smith" abound. One could multiply examples without end. However you may try, you will find it difficult to conjure up examples of discomfort in the average stomach caused by protein *per se*.

We can all recall examples in our persons of heartburn and repetition of food after taking such things as jugged hare, steak and kidney pudding with rich gravy or curry. But it is not the protein here that is causing the trouble. There is a class and doing all that they should do, who are suffering of patient with good teeth, careful in mastication from dyspepsia of the sthenic or asthenic type, mostly of the asthenic, but they are taking a light diet which usually means slops, certainly all carbohydrate, with perhaps an egg occasionally interspersed. The patient is not getting better, in fact, worse. You find on questioning him, that the digestion had always been good until a few weeks or months before the patient was laid up with some illness—it does not matter what. The patient during the illness is fed on a very spare diet of slops and has not much appetite. As convalescence proceeds, more slops are taken and discomfort grows, so the supposedly more difficult foods to digest are avoided and slops are continued and continued, all carbohydrates, alkalis as adjuncts and so a vicious circle is set up. This is the condition spoken of by MacLean as the dyspepsia of general debility.

Again, there is the class of patient who takes tea and biscuit before breakfast or makes this her breakfast, who continues to take tea and biscuit at constantly recurring intervals during the day and a fairly decent three course meal in the evening. Is there any wonder that these patients suffer and if no structural disease has already taken place, in most cases we find how readily they improve with proper feeding.

It has been the fashion for the past twenty-five years to treat all forms of indigestion by restricting fluids with meals. When I first saw the treatment prescribed by a fashionable London physician and asked the reason, the answer given was that fluids with food cause fermentation—the then accepted cause of flatulence. We now know that this is not the reason and that it is questionable if fermentation is ever the cause of flatulence, except in cases of prolonged stasis of food in the stomach and we know that fluids pass out of the stomach quickly. But we do know that the restriction of fluids with and for some time subsequent to meals has a most beneficial effect in the treatment of many forms of indigestion. And here again we learn much from observing the habits of the *herbivora* and *carnivora*. We know now that we can allow fluids with im-

punity in prescribing a protein diet, but not with a carbohydrate diet. And why? Presumably not only in swallowing liquids air is readily swallowed, but because it also tends to dilute the saliva. I cannot recall an example of fluid taken with meals causing heartburn or anything akin to it, but it seems to cause discomfort and belching. How often we see a patient complaining of discomfort half an hour or an hour after meals with phases of belching which comparatively cause relief until symptoms of hyperchlorhydria supervene a few hours after the meal. The patient may be treated by alkalis or acids and with all diets and fluids restricted or not and no relief obtained. If you carefully watch the patient you will find that he is a wind gulper and if you ask him to bring up some wind and will listen with the stethoscope over the stomach, you hear first the air enter the stomach. The belching is also characteristic, being of an explosive character. However, if you cannot entice the patient to gulp wind and he complains that he has the wind in the stomach before any food is taken in the morning, you can be fairly sure that you are dealing with an aerophage.

However, one word of warning. Retrosternal discomfort, irrespective of time in the digestive cycle and belching of large quantities of wind, the result no doubt of aerophagy, are most alarming symptoms in myocardial conditions, as they often precede sudden death.

Again, I wish to make it perfectly clear that I am not dealing with structural or organic diseases of the gastro-intestinal tract. Many if not all of the symptoms I have enumerated, taken in addition to other symptoms, would fit in with diagnosis of gastric ulcer, duodenal ulcer and indigestion of biliary or appendicular origin. There are no doubt many other examples of indigestion that I have not touched on with a variety of aetiological factors. It would be impossible with the time at my disposal to attempt to speak of the many psychogenically altered gastric secretions.

What I have attempted to do is to bring out before you the very large factor that carbohydrates play in producing indigestion owing to improper insalivation or preparation of these foods.

I have not mentioned the effect of imperfect carbohydrate digestion upon the intestinal functions or how frequently one sees glycosuria, consequent to imperfect mastication of them. In view of our knowledge we should expect it.

The treatment of early indigestion becomes very simple. The sausage machine of the patient almost directs the treatment and diet. Alkalis, acids and bitters no doubt are sometimes most useful as adjuvants, but in most cases could be dispensed with, if we had the stomach alone to think of. The most useful drugs in treating the sthenic form of digestion I have found to be bromide and belladonna after meals and in treating asthenic forms, *nux vomica* and bicarbonate of soda taken before meals.

Reports of Cases.

ABDOMINAL TUBERCULOSIS.

By CLIFFORD S. COLVIN, M.B., Ch.M. (Sydney),
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L.A., a male, aged thirty-eight years, an Italian fruiterer, was admitted to the Sydney Hospital on July 28, 1926. He complained of pain in the abdomen and jaundice. The patient had been sent to hospital by Dr. Thomas Flaschi. He lived in Italy until one year and eight months ago when he came to Australia. He was wounded while fighting on the Italian front during the war and sustained a gunshot wound in the leg. After this an abscess formed in the groin and a sinus persisted in this region for three years. This sinus healed two years ago. He stated that he was given two hundred injections (probably a vaccine) as treatment for the sinus. His family history was clear.

Ten days before admission to hospital he was suddenly seized with severe pain in the middle of the epigastrium. The same day he noticed the jaundice and went to bed. The pain diminished next day, being replaced by a constant ache which was worse at times. The jaundice became more pronounced. He did not vomit. His stools were clay coloured and his urine was the colour of strong tea. He gave no history of previous attacks and denied luetic infection.

Physical examination on July 28, 1926, revealed a pulse rate of 90 and a temperature of 36.7° C. (98° F.). The patient, a dark skinned man, was obviously jaundiced. The sclerotics were a yellow colour. The tongue was furred. The abdomen was soft and moved freely with respiration. He was tender on pressure in the right hypochondrium and Murphy's sign was present. The lower border of the liver was palpable 2.5 centimetres (one inch) below the right costal margin. The spleen was not palpable. The urine was acid, its specific gravity was 1022, bile was present, but otherwise it was normal.

Three days later he was slightly more jaundiced. Seven days later jaundice was still present and the stools were light in colour. The temperature had remained normal.

Six days later his condition was unchanged.

A preoperative diagnosis of gall stone in the common bile duct was made.

Operation was performed on August 11, 1926, under general anaesthesia by Dr. George Bell, the abdomen being opened by a Kocher's incision.

Adhesions were present on the anterior surface of the right lobe of the liver. Small hard nodules (about the size of sago grains) were found on the inferior surface of the liver, anterior surface of stomach, especially along the greater curvature and in the omentum. These were at first thought to be nodules of malignant growth. The gall bladder was thickened and distended. No stone could be palpated in the bile ducts and no abnormality of the pancreas was detected. A cholecystenterostomy was performed, the gall bladder being anastomosed with the duodenum. After operation the jaundice gradually disappeared. There was slight pyrexia for ten days. The patient was discharged on September 10, 1926. He was not then jaundiced and felt well.

The Wassermann test yielded no reaction. A blood count revealed a slight lymphocytosis, 4%.

During the operation some of the small hard nodules were excised. Dr. Keith Inglis examined these and reported that macroscopically the specimen consisted of small fragments of fat in which milium nodules were present. Microscopically the lesions were inflammatory. The small nodules manifested a granulomatous structure with giant cell systems and central necrosis. Dr. Inglis said that should there be clinical evidence to suggest syphilis a Wassermann test was indicated, but in his opinion the macroscopical and microscopical features strongly suggested milium tuberculosis.

The patient returned a month after his discharge from hospital. He was not jaundiced. He looked and felt well.

Acknowledgment.

I am indebted to Dr. George Bell for permission to publish the notes of this case.

The Medical Journal of Australia

SATURDAY, DECEMBER 18, 1926.

Educating the Public.

THE Victorian Branch of the British Medical Association may congratulate itself not only on the completion of a year full of achievement and progress, but also on the brilliant review of the year's work by its learned retiring President. Dr. H. D. Stephens had a difficult and onerous task to perform when he was appointed to the chair which had been filled by so many eminent leaders of the profession. It is common knowledge that he has maintained the high standard set by his predecessors and has exhibited a broadness of vision and a degree of resourcefulness of unusual magnitude.

In the course of his address Dr. Stephens mentioned that it was the intention of the Australasian Medical Publishing Company, Limited, to issue a popular journal on health "comparable" he imagined "to *Hygeia*, the publication subserving similar interests in America." It will be within the recollection of the readers of this journal that the Federal Committee of the British Medical Association in Australia considered on February 5, 1925, a motion of the New South Wales Branch to the effect that a popular journal containing information in regard to health and disease and its prevention and in regard to medical and allied science should be published by the Australasian Medical Publishing Company, Limited. The Federal Committee accepted the proposition and requested the Directors of the company to consider the feasibility of publishing a monthly or quarterly popular medical journal. The Directors of the company, having realized the disadvantages of delay and having recognized the need for some authoritative channel of public education, anticipated the action of the Federal Committee and resolved to undertake the publication. In a leading article published on March 7, 1925, some indications of the nature and scope of the magazine or journal were given. At that time The Printing

House had just been completed and it was therefore deemed inadvisable to start the new magazine until the printing staff had got into its stride and the organization of the house had been adjusted to the work on hand. In August of the same year the Directors deferred the consideration of the proposal for a further six months. In February of the current year the matter was considered and as a result of the discussion a concrete scheme was submitted to the meeting in August. In the meantime the Royal Commissioners on Health had recommended that:

The Australasian Medical Publishing Company, Limited, in addition to publishing THE MEDICAL JOURNAL OF AUSTRALIA, should publish a popular health journal or magazine, the columns of which could be made available for publishing information supplied by the Commonwealth Department of Health and the several State Health Departments.

In the report of the Directors submitted to the Annual General Meeting of the company the following passage appears:

The question of adding to the plant has arisen not only in anticipation of increased business coming in the ordinary way, but is due to the fact that it is proposed to produce an illustrated monthly popular health magazine designed to meet the requirements of outside readers for authoritative information on public health and medical subjects.

An editorial committee has been appointed and some of the preliminary work has been carried out. The editorial committee is, however, now at a full stop. The printing machinery of the company is working at full pressure and the staff is scarcely able to keep pace. Printing presses and type setting machines are expensive, but the outlay is justified provided that they can be kept in motion. Until the necessary financial arrangements are made, no further progress will be possible.

The Directors of the Australasian Medical Publishing Company, Limited, and the members of the editorial committee of the new health magazine will expect full support from the medical profession when these initial difficulties have been overcome. The success of the undertaking will depend chiefly on two factors. The first is that the contents of the magazine are of the right kind. The articles and paragraphs must be informative, non-technical and

readable and the illustrations must be attractive. The second is that the people of Australia must be persuaded to purchase the magazine. It will be a health magazine for the people. The word popular has been rejected: if the members of the medical profession will induce their patients to buy it and if the messages are delivered in an artistic and acceptable manner, the magazine will become popular. It will embrace health and disease; its slogan will be facts, not fancies. It will be built on a plan different from that on which the admirable magazine of the American Medical Association, *Hygeia*, has been based. Unless it can command a large circulation, it will fail in its purpose, namely the education of the public in matters appertaining to the maintenance of health and the prevention of disease. Notwithstanding the fact that it will not be possible to produce the first issue, as had been planned, in January, 1927, the editorial committee is hopeful that the delay will be a short one. It is probably not too early to start the propaganda, so that the curiosity of the public may be awakened before the first issue of the little magazine appears.

Current Comment.

THE ACTION OF X RAYS ON SKIN.

It has long been recognized that under certain circumstances X rays stimulate tissue cells to hyperplasia, while under other conditions X rays exert a destructive action on tissue cells. It has been almost universally held that the factor that determines whether the rays will stimulate or whether they will destroy cells is that of dosage. This explanation holds good for certain chemical agents. Silver nitrate applied to the skin or mucous membrane in dilute solution stimulates the epithelial cells; when the same substance is applied in solid form its action is caustic and destructive. Lazarus Barlow and others have taught for many years that certain forms of malignant tumours of the skin and mucous membrane are caused by the prolonged action of radio-active substances. The disasters which have befallen the pioneer radiologists almost without exception, must be accepted as evidence of a stimulation to hyperplasia of X rays when applied to the skin in small and repeated doses extending over a long period of time. Since massive doses of X rays have been employed in the treatment of carcinomatous growths, it has become evident that a destructive effect is inevitable in those tissue cells that are exposed to large doses

repeated by cross fire methods at short intervals. The cells at the periphery of the irradiated areas receive small doses and escape when the point of attack is changed. Sometimes, but not always these cells are stimulated and undergo hyperplasia. This is not merely a question of dose. Recently Dr. W. Moppett, of the Sydney University, has produced evidence that atrophy or destruction can be caused by exposure of tissue cells to monochromatic X rays of certain wave lengths, while stimulation results if the wave lengths of the rays employed lie between those that cause atrophy. From the curve published with his article in these columns it is seen that the atrophic effects appear with X rays of 0.11, 0.53 and 0.79 Ångström unit. The dosage, that is the energy of the discharge of the rays, remained the same throughout his experiments.

Dr. Hector Colwell and Dr. M. Sydney Thomson have carried out some highly interesting experiments with X rays applied to the skin of tadpoles and their observations are extremely suggestive.¹ The tadpoles were placed in circular, flat-bottomed dishes and immersed in fluid. The irradiation was effected by means of a Coolidge tube working at two milliamperes with a seventeen and three-quarter centimetres (seven inches) spark gap. The anticathode was placed twenty centimetres (about eight inches) from the tadpoles, while the depth of the fluid in which they were immersed was thirty-eight millimetres (about one and a half inches). The irradiation lasted for one and a half hours, two hours and five hours, while the tadpoles were examined either immediately after the irradiation or after the lapse of time varying from twenty-four hours to seventeen days. The effect of the rays on the skin of the tadpoles when immersed in tap water was stimulation, with increased nuclear activity and cellular proliferation, followed by atrophy. Even when the mixed rays acted on the skin for but one and a half hours, after twenty-four hours the epidermis was found to be in a condition of hyperplasia. No evidence of atrophy was detected until about eighty-four hours. The atrophy reached its maximum after about sixteen days. The observers then immersed tadpoles in colloidal solutions of metals in order that instead of primary rays reaching the skin, pencils of secondary rays of the wave length characteristic of the element employed were brought into action. No special precautions were adopted to exclude primary radiation, nor were any measurements made to ascertain the actual range of wave lengths of the secondary rays that reached the tadpoles' skins. Notwithstanding the uncertainty concerning the exact nature of the rays, the effects were remarkable. The skin of tadpoles immersed in solutions or suspensions of colloidal silver underwent hyperplastic changes of extreme grade. These changes were evident at an early date and persisted. No undoubted atrophy was detected. When the secondary rays emanated from a suspension of colloidal gold, hypertrophic changes were also produced. They were less extensive than those of tadpoles exposed to X rays in the presence of colloidal

¹ *The Lancet*, July 10, 1926.

silver, but they were peculiarly noticeable and persistent. On the other hand when lead or bismuth was employed, the hyperplastic changes were far less developed and were replaced by degeneration changes after a period of some days. No hyperplasia was discovered when the irradiation took place in the presence of copper. When silicium was used, slight hyperplasia appeared, but soon gave place to atrophic changes. Dr. Colwell and Dr. Thomson suggest that the changes may be determined by the wave lengths of the secondary radiation arising in the silver or gold solutions.

In the course of the experiments it was noted that suspension of tadpoles in 10% "Colossal Gold" led to toxic effects. The authors seem to be at a loss to explain this toxicity. All metallic elements are highly toxic to epithelium and endothelium. It is a disadvantage that the tadpoles in these experiments were exposed to the possible chemical action of the metals. But despite the possibility of some toxic action of any or all the metals, the results of the secondary irradiations seem to lend support to Dr. Moppett's conclusions.

PARTIAL NEPHRECTOMY.

It is stated that Czerny was the first surgeon to remove a portion of a kidney for a localized lesion. It had previously been demonstrated experimentally that resection of part of the renal parenchyma could be undertaken without disturbance of the function of the remaining portion of the organ. Three years later, that is in 1890, Keetley recorded the first successful operation of this kind on a human being in England. For a considerable time this operation was regarded as an interesting possibility, but few surgeons were able to use it on account of the difficulty in ascertaining when a lesion was sufficiently localized to render it possible to retain a substantial portion of the healthy kidney. It seems that between 1887 and 1905 partial nephrectomy was undertaken as it were at the spur of the moment. At times the surgeon hesitated to remove the whole organ when he found that the major part of the kidney was apparently healthy. The list of diseases for which it was performed in these early days, is surprisingly varied. It includes pyelonephritis, tuberculosis of the kidney, calculus of the kidney or its pelvis, cystic disease of the kidney, neoplasms of various kinds, echinococcal cysts and trauma. Two circumstances militated against its recognition as a standard method of treatment. The exact diagnosis of a localized lesion was largely a matter of conjecture in those days. Moreover, there was uncertainty concerning the amount of functioning renal tissue needed to support life. Recent advances have removed both objections. It is now known that an animal, including man, can live under favourable conditions if one kidney is absent and but two-thirds of the second organ are functionally active. The risks of the operation are small and advantages to the patient are enormous if it be feasible to

remove disintegrated tissue with preservation of useful parenchyma.

Dr. S. Perimann and Dr. Z. Kairis have undertaken some experimental work to determine the limits of safety of removal of renal tissue.¹ They used dogs for their experiments. In the first place they demonstrated that the remaining portion of the kidney after removal of one-quarter of the organ from six to thirty-three days after operation had an entirely normal appearance. In a second group they removed one kidney and three weeks later they performed resection of one-quarter to one-third of the second kidney. The animals remained in good health. They were killed twelve days after the operation. The parenchyma had a normal appearance. When the resection was performed simultaneously on both kidneys, the animals were greatly affected and one died of uræmia. Further experiments revealed that life cannot be supported if removal of one kidney and resection of a quarter of the other are undertaken at one sitting. These observations confirm the previously held opinion that even when one kidney has been destroyed or removed, it is safe to resect one-quarter to one-third of the second organ. The dangers of the operation are practically limited to hæmorrhage and this can be effectively countered by the use of a muscle graft on the exposed surface.

With the development of pyelography and the introduction of the several tests for renal function, it has become possible to determine with a considerable degree of accuracy the site of a renal lesion and the functional condition of each kidney. Resection of a part of a diseased kidney, when the second organ is absent or incapable of functioning, has proved itself to be a life-saving operation on many occasions. Resection has been employed with success for pyelitis affecting one section of a double kidney. These congenital malformations are peculiarly liable to pathological changes, owing to anatomical defects and general constitutional want of resistance. According to Young and Davis the pathological changes in double kidneys discovered after removal are frequently limited to one half. The operation is of great value in hydatid disease of the kidney, since conservative surgery is indicated in this disease. For tuberculous lesions resection may represent the only treatment with a prospect of success. Resection has been applied on numerous occasions for renal calculus. It is essential that only one or two calices are effected and that the greater part of the renal pelvis is normal. The majority of urologists have discarded this operation for the treatment of neoplasms. It is obviously useless in malignant disease and it is unnecessary for benign tumours.

Pyelographic studies have revealed that not infrequently a group of calices are dilated as a result of the impaction of a calculus. This leads to a localized hydronephrosis. The diagnosis is dependent on the pyelographic appearances. Resection is the correct treatment, provided that the cause of the obstruction can be removed.

¹ Zeitschrift für Urologie, Band XX., Heft 8, 1926.

Abstracts from Current Medical Literature.

PHYSIOLOGY.

Second Wind and External Temperature.

G. E. BERNER, C. C. GARRETT, D. C. JONES AND R. J. NOER (*American Journal of Physiology*, May, 1926) have investigated the possibility of the hyperpnea at the commencement of muscular exercise being influenced by temperature changes. Particular attention was paid to the actual rate of change of body temperature in exercise. Work was done on a bicycle ergometer. The subjects noticed as a rule a very definite sensation of second wind, the respirations becoming easier and the actual performance of the muscular work requiring less effort. It was noticeable that this sensation appeared earlier and was more definite, the greater the amount of work. It also occurred earlier in a warm room than in a cold one and probably earlier also when the subject was more heavily clothed. When the subject was in a very cold room and wore light underclothing, no second wind might be recognizable. The subjective sensations were confirmed by records of the respiratory changes. The increase in the volume of air breathed with exercise occurs more rapidly in a warm than in a cold room. Neither of these variations appears to be dependent on changes in deep body temperature in the trunk, since at this time the rectal temperature is scarcely altered. The most reasonable hypothesis seems to be that the rate at which the muscle develops its full power to remove lactic acid, is determined by its temperature and that the temperature of the muscle reaches its optimum earlier when the metabolism is high with heavy work or when the surrounding air is warm.

Sulphur Metabolism.

THE functions of the suprarenals are but little known. Loeper, Decourt and Garcin (*La Presse Médicale*, September, 1926) bring evidence to show that they have an important relation to sulphur metabolism in the body. The idea arose from a study of the pigment melanin, which is a sulpho-amino pigment, in the darkening of the skin in Addison's disease. Sulphur is found in the tissues in the states of oxidized sulphur, conjugated sulphur and neutral sulphur. About 80% of the sulphur of the blood is in the oxidized form in health and in the majority of diseases, but in Addison's disease this may be lowered to 60% or even 50%. There is also in this disease an increase in the total amount of sulphur in the blood. After removal of one of the suprarenals the total amount of sulphur in the blood increases considerably for several days and then drops somewhat. For example in one experiment it rose from 0.22 before the operation to 0.894 after five days and then fell to

0.378 after twenty-two days. The greater part of the increase is in the neutral sulphur. It is suggested that the gland fixes sulphur, since it was found in three experiments that the blood of the suprarenal vein contained less sulphur than the blood of the suprarenal artery. Further the amount of oxidized sulphur was greater in the venous blood than in the arterial blood. The suprarenals contain considerable amounts of sulphur, eight to eleven parts in each thousand parts by weight. The authors suggest that, melanin being a sulpho-amino compound, it may be assumed that it increases in amount in proportion to the excess of sulphur circulating in the organism and that melanoderma will be a consequence of this.

Vasoconstriction and Leucocyte Counts.

A. F. B. SHAW has studied the effects of local vasoconstriction and vasodilatation on the leucocytic content of the blood taken from the affected vessels (*The Journal of Pathology and Bacteriology*, October, 1926). The ear veins of rabbits and the "capillaries" of the fingers and ear of man were used. Vasoconstriction in the rabbit's ear was taken as the resting condition with the vessels small. Vasodilatation was induced by rubbing the ear. In man vasoconstriction was brought about by the application of cold and vasodilatation by rubbing. In most cases leucocyte count was carried out on both sides of the body as nearly as possible simultaneously, so that the effect of vasodilatation on one side could be compared with vasoconstriction on the other without the disturbing factor of possible physiological fluctuations. Vasodilatation is accompanied by an immediate fall in the number of leucocytes which are equally distributed on both sides of the body. In vasoconstriction on the other hand leucocytes accumulate in the vessels and are unequally distributed on opposite sides of the body. The differences in man are not so great as in the rabbit, but are definite. Thus, two samples taken simultaneously one from the left finger with vasoconstriction contained 7,150 and one from the right finger with vasodilatation contained 4,250 leucocytes per cubic millimetre of blood. There are no corresponding changes in the red corpuscles; it therefore appears that the changes in the leucocytes are not due to alterations in the concentration of the blood.

Penetration of Ultraviolet Rays.

D. I. MACHT, F. K. BELL AND C. F. ELVERS (*American Journal of Physiology*, March, 1926) have endeavoured to determine the depth through which ultraviolet rays from a mercury vapour lamp can penetrate tissues. In animals the skin was turned back and a spectrograph placed under it. The skin was then radiated from the outside with Krohmayer and "Alpine Sun" mercury vapour lamps and a spectrograph of the waves passing through the skin was thus obtained

while the animal was alive and the blood circulating. It was found that a considerable number of invisible ultraviolet rays passed through the rabbit's, cat's and dog's skins. In the rabbit skins varying from one to two or more millimetres in thickness the spectrograph showed the lines in the region of 2,800 Ångström units and sometimes even shorter waves. In the case of the rabbit the longer ultraviolet rays penetrated not only through the skin, but even through the whole thickness of the abdominal wall. Leather is much more opaque than living skin. Fresh specimens of human skin from the operating room when not excessively thick, also allowed the penetration of the longer ultraviolet rays. In the skin of the negro there was absorption of the whole of the ultraviolet region.

Pulse Pressure and Stroke Volume.

THE product of the pulse pressure multiplied by the pulse rate has been used as an index of the circulation rate. That the relation of these two values to one another or more simply stated of the pulse pressure to the stroke volume of the heart might not be one of direct proportionality has been fully realized. Differences in the capacity of the arterial tree and in the elasticity of the arteries in different individuals preclude the use of the pulse pressure multiplied by the pulse rate for comparison of different circulation. Experimental evidence as to the value of this proportionality has been very uncertain. I. T. Rosen and H. L. White (*American Journal of Physiology*, September, 1926) have investigated the question in man using the method of Henderson and Haggard for determining the circulation rate. They find that within the limit of error the pulse pressure is directly proportional to the stroke volume under conditions which yield essentially the same diastolic pressure and pulse rate. When variations from proportionality occur, they can be attributed to the effect that differences in the coefficient of elasticity of the arterial wall, determined by the arterial pressure, and that differences in pulse rate and consequently in systolic time have upon the relation of the stroke volume to the pulse pressure. By taking this into consideration it should be possible to employ the product of the pulse pressure and the pulse rate as an index of the circulation rate in consecutive observation in one and the same subject.

Egg Yolk in Calcium-Poor Diets.

A GOOD example of the need of a proper consideration of the dietetic habits of a people in regard to the vitamin and mineral content of a diet is given by E. Tso (*American Journal of Physiology*, June, 1926). He discusses the value of egg yolk in supplementing diets deficient in calcium and shows that egg yolk is a food possessed of a physiological value; it is

unique in this respect. For example, a diet containing approximately 0.15% of calcium which is generally considered inadequate, can be transformed into an adequate ration for the normal nutrition of experiment animals for four generations by the addition of approximately 5% of fresh egg yolk. These experiments were performed on young albino rats. The results of these experiments have a practical bearing of fundamental importance on the problem of feeding of young children in such a country as China where cow's milk is very little used. To most households the cost of milk seems almost prohibitive. On the other hand the cost of eggs is extremely low. Therefore, the addition of one or two eggs a day to the diet of Chinese children should be of immense value not only in enhancing its vitamin A and vitamin B content and its protein quality, but also in improving the calcium metabolism and safeguarding the body against calcium starvation.

BIOLOGICAL CHEMISTRY.

Vitamin in Lemon Rind.

S. G. WILLMOTT has made a study of the content of Vitamin B in the outer rind of the fresh lemon (*Biochemical Journal*, November, 1925). Although much work has been done on the juices of different members of the citrus family, the only previous studies of peel have dealt with orange peel. These studies have shown that considerable amounts of Vitamin A are present in orange peel. In the present investigation a group of albino rats have received a diet adequate in every factor except Vitamin B which has been supplied as an alcoholic extract of lemon rind. The growth curves of the members of this series have been compared with those of a control series of albino rats fed upon a complete synthetic diet. The basal ration has contained pure potato starch, fine castor sugar, refined palm kernel oil, pure extracted caseinogen and a salt mixture of sodium chloride, magnesium sulphate, sodium, potassium and calcium phosphates, calcium lactate, ferric citrate, sodium fluoride, potassium iodide and manganese sulphate. A little sodium sulphate has been also added. This balanced ration has a nutritive ratio of one to four and an energy value of 467.5 calories per hundred grammes. As controls pure Norwegian cod liver oil, extract of yeast and filtered juice of fresh lemons have been used as sources of vitamins. From the experimental results it has been evident that Vitamin B is present in appreciable amounts in the rind of the fresh lemon. When only 0.5 cubic centimetre of lemon extract was fed per head *per diem* (equivalent to 0.25 gramme of rind) as the sole source of Vitamin B almost normal growth resulted. This supply of Vitamin B is sufficient for reproduction, but not for the successful rearing of the offspring.

Phosphorus in Milk.

E. LENSTREP (*Journal of Biological Chemistry*, September, 1926) has made a study of the phosphorus content of human milk and of cow's milk for the purpose of finding out what forms and quantities of phosphorus are ingested by the breast-fed and artificially fed infant. This problem has resolved itself into a determination of the different phosphorus compounds of human and cow's milk. By using the method of Gregersen as modified by Iverson, the author estimated total phosphorus consisting of acid-soluble phosphorus and acid insoluble phosphorus. Acid-soluble phosphorus consists of two portions, inorganic and organic. Acid-insoluble phosphorus likewise consists of two parts, lipid phosphorus and protein phosphorus. By comparing the amounts of acid-insoluble phosphorus with the amounts of casein phosphorus precipitated by rennet in cow's milk, the author has inferred that 98.5% acid-insoluble phosphorus consists of casein phosphorus. Analyses of fifteen samples of normal herd milk (mixed from thirty cows) and of fifteen samples of human milk spread over the period of lactation from fifteen to three hundred and thirty-eight days show 14.2 milligrammes total phosphorus in one hundred cubic centimetres of human milk as compared with 95.4 milligrammes in one hundred cubic centimetres of cow's milk. Inorganic phosphorus amounts to 5.1 milligrammes in one hundred cubic centimetres of human milk as compared with 67.1 milligrammes in one hundred cubic centimetres of cow's milk. Organic phosphorus amounts to 6.5 milligrammes in one hundred cubic centimetres of human milk as compared with 11.2 milligrammes in one hundred cubic centimetres of cow's milk. The casein phosphorus amounts to 2.6 milligrammes in one hundred cubic centimetres of human milk and to 17.1 milligrammes in one hundred cubic centimetres of cow's milk.

Food Utilization.

OLAF BERGEIM has devised a new method of measuring the extent of food utilization in the alimentary canal (*Journal of Biological Chemistry*, September, 1926). By food utilization the author means the difference between the amount of food substance in the diet and the amount excreted in the faeces. In the case of proteins, fats and carbohydrates utilization depends chiefly upon and is a measure of the digestibility of the food substance. In the case of inorganic salts and simple sugars which do not require digestion, what is really measured is absorbability. These measurements of the proportions of the ingested food substances made available for the uses of the body by digestion and absorption are necessary to the estimation of the nutritive value of foods. They serve also as indices of the digestive and absorptive powers of the alimentary canal in health and in disease and of the factors influencing digestion and absorption. Few studies on these lines have

been made. Hundreds of studies have been made on rickets involving calcium absorption for which investigators prefer to use as measures of calcium intake the growth of the animals or the formation of lines of calcification in the bones. Such methods are valuable, but they are not quantitative measures of calcium absorption. The absence of information is largely due to the difficulty of carrying out such experiments. In the standard method carmine is given at breakfast on the first day of the experiment and a uniform diet is fed for five to seven days. A second dose of carmine is given at the last meal of the period. The food is weighed and analysed. The faeces are weighed and analysed either in bulk after storage at zero or sample by sample. The long period of uniform feeding makes such experiments infrequent and the erratic behaviour of the carmine often makes it impossible to isolate the faeces of the experiment period. The author proposes the addition to the food of small amounts of iron oxide (or other suitable material). This being practically insoluble and unabsorbable and of suitable physical consistency follows the food in the course of its passage and is excreted with completeness in the faeces. The amount of iron in the food and in the faeces is readily determined and the ratios of the amount of any food substance in the diet and in the faeces to the amount of iron enables the percentage of utilization to be calculated. The advantages of this method are numerous. There is no need to weigh the food nor to weigh the total faeces. Provided the iron oxide is intimately mixed with the food, there is no special care required to insure that all food is eaten. Again errors in analysis are minimized as the error falls on the small unutilized residue. The method can be readily employed on small animals such as albino rats.

Crystalline Urease.

J. B. SUMNER (*Journal of Biological Chemistry*, August, 1926, and September, 1926) believes that he has separated urease in the form of octahedral crystals. The author separates from jack bean a protein or substance giving typical protein tests in the form of octahedral crystals which yield solutions of extraordinary activity in decomposing urea into ammonium carbonate. The author believes that these crystals are identical with the enzyme urease, since the crystals can be separated apart from any other visible material and since the crystals can be recrystallized without any loss of the extraordinarily high power of converting urea into ammonium carbonate. The crystals have been prepared by extracting powdered, fat-free jack bean with acetone and allowing the acetone extract to stand in the ice chest. Full details of the process are given by the author. Solutions of the enzyme are free from iron, manganese and phosphorus. The crystals contain approximately 17% nitrogen and practically no ash.

British Medical Association News.

ANNUAL MEETING.

THE ANNUAL MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION AND OF THE MEDICAL SOCIETY OF VICTORIA was held at the Medical Society Hall, East Melbourne, on December 1, 1926, DR. H. DOUGLAS STEPHENS, the President, in the chair.

Welcome to Dr. R. J. Bull.

THE PRESIDENT extended a cordial welcome to Dr. R. J. Bull, the senior Vice-President, who had just returned after an absence of eight months in England and America.

DR. R. J. BULL said that he greatly appreciated the kindly welcome extended him by the President. It had been his privilege to convey the greetings and sentiments of loyalty of the Victorian Branch to the parent Association and he had been especially asked by Dr. Alfred Cox, the Medical Secretary, to present reciprocal greetings on his return.

He had seen a great deal of the work of the British Medical Association in England and in consequence felt proud that the organization of the medical profession in Victoria was an offspring of such a fine scientific body. Its activities were astonishing. Merely to have been conducted through the office of *The British Medical Journal*, as had been his privilege under the guidance of Mr. Ferris Scott, was very illuminating and it would interest them to know that the weekly issue of *The British Medical Journal* reached 37,000 copies.

Dr. Bull paid a tribute to the efficiency and dispatch which characterized the proceedings of the Representative Body. This, the parliament of the British Medical Association was attended by two hundred and fifty delegates from all parts of the British Empire. The personality of the responsible leaders, Sir Robert Bollen, Chairman of the Council, and Dr. Brackenbury, Chairman of the Representative Body, impressed him deeply. In meeting them and others he felt that he had been privileged to meet men who might justly be described as "great"; they were great in knowledge, great in assiduity, great in modesty and very approachable.

The annual meeting of the Association had been held at Nottingham, a picturesque and interesting town. No detail which could possibly conduce to the comfort and entertainment of visiting delegates, had been overlooked. From the scientific aspect he regarded the presentation of the report of the Liverpool Council of Cancer Research which included the work of Professor Blair Bell, as the outstanding feature.

In conclusion Dr. Bull gave a short account of researches in single-celled physiology and pathology and in malignant disease as he had become acquainted with them at the Rockefeller Institute and the Pennsylvania and Cornell Universities.

Election of Members of Council.

THE PRESIDENT declared the result of the election of members of the Council of the Victorian Branch and of the Committee of the Medical Society of Victoria as follows.

(1) Elected as representing group "Divisions":

Dr. F. J. Bonnin.	Dr. J. H. Pestell.
Dr. F. L. Davis.	Dr. D. Rosenberg.
Dr. A. E. Ffrost.	Dr. A. C. H. Salter.
Dr. S. C. Fitzpatrick.	Dr. Walter Summons.
Dr. J. W. Florance.	Dr. B. M. Sutherland.
Dr. J. J. Harris.	Dr. W. G. D. Upjohn.
Dr. J. W. Dunbar Hooper.	Dr. G. Weigall.
Dr. F. E. McAree.	Dr. J. F. Wilkinson.
Dr. R. G. McPhee.	

(2) *Ex officio* members:

Dr. R. H. Fetherston.	Dr. J. Newman Morris.
Dr. W. Kent Hughes.	Sir George Syme.
Dr. C. H. Mollison.	

(3) Elected by ballot of the general body of members:

Dr. A. V. M. Anderson.	Dr. R. J. Bull.
Dr. Stanley S. Argyle.	Dr. R. M. Downes.

Dr. Victor Hurley.
Dr. A. L. Kenny.
Dr. L. S. Latham.
Dr. F. Maclure.
Dr. J. P. Major.

Dr. W. J. Penfold.
Dr. Allen Robertson.
Dr. C. Gordon Shaw.
Dr. H. Douglas Stephens.
Dr. B. T. Zwar.

Annual Report of Council.

The Annual Report of the Council was taken as read on the motion of DR. L. S. LATHAM, seconded by DR. A. L. KENNY.

The Report was adopted on the motion of DR. J. W. DUNBAR HOOPER and seconded by DR. A. L. KENNY.

DR. J. NEWMAN MORRIS drew attention to the fact that the Report contained no reference to the work of the Sections of the Branch. This omission was the fault of the Sections themselves. The rules governing the formation of Sections required that each Section should furnish a record of its proceedings during the year in time for inclusion in the Annual Report, but no such records had been received. This was the more to be regretted on account of the fact that the Sections had been very active.

He had been informed that the energy displayed by the Victorian Branch had been the subject of comment by officers of the British Medical Association and their Branch had been credited with having achieved a record number of scientific meetings in one year.

THE COUNCIL OF THE BRANCH AND THE COMMITTEE OF THE SOCIETY present the Annual Report for the year 1926:

Election.

At the Annual Meeting held last December the following members of the Council and of the Committee were elected:

Dr. Stanley Argyle, Dr. R. J. Bull, Dr. R. M. Downes, Dr. R. H. Fetherston, Dr. R. Fowler, Dr. Victor Hurley, Dr. A. L. Kenny, Dr. L. S. Latham, Dr. F. Maclure, Dr. J. Newman Morris, Dr. H. Douglas Stephens, Dr. B. T. Zwar, Dr. W. J. Penfold, Dr. Allen Robertson.

The following members were elected by the Divisions: Dr. F. J. Bonnin, Dr. F. L. Davies, Dr. A. E. Ffrost, Dr. S. C. Fitzpatrick, Dr. J. W. Florance, Dr. J. W. Dunbar Hooper, Dr. P. V. Langmore, Dr. F. E. McAree, Dr. R. G. McPhee, Dr. J. H. Pestell, Dr. A. C. H. Salter, Dr. Walter Summons, Dr. B. M. Sutherland, Dr. W. G. D. Upjohn, Dr. J. F. Wilkinson, Dr. D. Rosenberg, Dr. G. Weigall.

These members, together with the Trustees of the Medical Society (Dr. C. H. Mollison, Sir George Syme, Sir Charles Ryan and Sir Harry Allen), the Director for Victoria of the Australasian Medical Publishing Company, Limited (Dr. W. Kent Hughes) and three additional coopted members (Sir James Barrett, Dr. C. Gordon Shaw and Dr. D. G. Robertson) constituted the Council for 1926.

The new Council elected as President Dr. H. Douglas Stephens; Vice-Presidents, Dr. R. J. Bull and Dr. J. N. Morris; Honorary Secretary, Dr. F. L. Davies; Honorary Treasurer, Dr. C. H. Mollison; Honorary Librarians, Dr. W. G. D. Upjohn and Dr. R. H. Fetherston; and Chairman of Committees, Dr. J. Newman Morris.

On the death of Sir Harry Allen and resignation of Sir Charles Ryan, Dr. R. H. Fetherston and Dr. J. Newman Morris were appointed by the Governor-in-Council Trustees of the Medical Society of Victoria and their places on the Council of the Branch were taken by Dr. A. V. M. Anderson and Dr. J. P. Major.

Council Meetings.

There were twenty-one ordinary meetings, at which the attendances were as follows:

Dr. F. L. Davies ..	21	Dr. Victor Hurley ..	16
Dr. R. M. Downes ..	20	Dr. L. S. Latham ..	16
Dr. A. L. Kenny ..	20	Dr. J. P. Major ..	15
Dr. Allen Robertson ..	20	Dr. R. G. McPhee ..	15
Dr. H. Douglas Stephens ..	18	Dr. J. H. Pestell ..	14
Dr. B. T. Zwar ..	18	Dr. C. Gordon Shaw ..	14
Dr. F. E. McAree ..	17	Dr. W. G. D. Upjohn ..	14
Dr. A. V. M. Anderson ..	16	Dr. G. Weigall ..	14

Dr. F. Maclure ..	13	Dr. R. J. Bull ¹ ..	5
Dr. D. G. Robertson ..	13	Dr. W. J. Penfold ..	4
Dr. Walter Summons ..	13	Dr. S. S. Argyle ² ..	2
Dr. R. Fowler ..	12	Dr. A. E. Frost ..	2
Dr. D. Rosenberg ..	12	Dr. P. V. Langmore ..	1
Dr. J. W. D. Hooper ¹ ..	11	Dr. F. J. Bonnin ..	0
Sir James Barrett ¹ ..	8	Dr. S. C. Fitzpatrick ..	0
Dr. B. M. Sutherland ¹ ..	8	Dr. J. W. Florance ..	0
Dr. J. F. Wilkinson ¹ ..	8	Dr. A. C. H. Salter ..	0
Dr. W. Kent Hughes ..	7		

Trustees.

Dr. J. Newman Morris	20	Dr. C. H. Mollison ..	18
Dr. R. H. Fetherston ..	18	Sir George Syme ¹ ..	14

¹ Leave of absence.² State duties.**Subcommittees.**

The following subcommittees were appointed by the Council. The first named member acts as convener of the subcommittee and the President, Chairman of Committees, Vice-Presidents, Honorary Treasurer and Honorary Secretary are *ex officio* members of all subcommittees.

Organization.—Dr. A. Robertson, Dr. D. G. Robertson, Dr. McAree, Dr. Pestell, Dr. Sutherland, Dr. Summons, Dr. Wilkinson, Dr. Rosenberg, Dr. Weigall, Sir James Barrett.

Ethical.—Dr. A. L. Kenny, Dr. A. V. M. Anderson, Dr. Latham, Dr. J. P. Major, Dr. Summons, Dr. Sutherland, Sir George Syme, Dr. Upjohn, Dr. Hooper, Dr. Maclure, Dr. Gordon Shaw.

Legislative.—Dr. Rosenberg, Dr. Kenny, Sir George Syme, Dr. Hurley, Dr. Downes, Dr. Fetherston, Dr. Zwar, Dr. Penfold, Dr. D. G. Robertson.

House.—Dr. C. H. Mollison and Dr. R. H. Fetherston.

Scientific.—Dr. Fowler, Dr. Hiller, Dr. Hurley, Dr. Maclure, Dr. Kellaway, Dr. Upjohn, Dr. Penfold, Dr. Gordon Shaw.

Medical Agency.—Dr. Hughes, Dr. Downes, Dr. Mollison, Dr. Upjohn, Dr. Fetherston.

Library Committee.—Dr. Upjohn and Dr. Fetherston.

National Insurance Committee.—Dr. Morris, Dr. Webb, Dr. Boyd, Dr. Fetherston, Dr. Rosenberg, Sir George Syme, Dr. Upjohn and members of the Organization Committee.

Obstetric Committee.—Dr. J. W. Dunbar Hooper, Dr. R. Fowler, Dr. H. Cairns Lloyd, Dr. A. M. Wilson, Dr. E. B. Heffernan, Dr. B. Zwar, Dr. Margaret McLorinan, Dr. B. M. Sutherland, Dr. J. Ramsay Webb.

The following appointments were made by the Council:

Bush Nursing Association.—Dr. Sutherland and Dr. Kenny.

Advisory Board to Medical Inspectors of Schools.—Dr. Zwar.

Free Kindergarten Union.—Dr. W. Kent Hughes.

The Representative Body.—Dr. R. J. Bull.

The Central Council (representing Group Division).—Dr. T. P. Dunhill (two years unexpired).

The Federal Committee.—Dr. R. H. Fetherston and Sir George Syme.

Executive Council Victorian Baby Health Centres.—Dr. W. G. D. Upjohn and Dr. R. M. Downes.

Post-Graduate Permanent Committee.—Dr. A. V. M. Anderson, Dr. J. W. Dunbar Hooper and convener of Scientific Committee.

Executive of Melbourne University Association.—Dr. W. G. D. Upjohn.

Society for Combating Venereal Disease.—Dr. Fetherston, Dr. Fowler, Dr. Hooper, Dr. Maclure, Sir George Syme, Dr. Weigall and Dr. D. G. Robertson.

Nurses Board.—Dr. B. T. Zwar.

Membership Roll.

The number of members on the roll is 1,311, as against 1,256 in the preceding year. During the year there has been a gain of 148 members (ninety-one by election, fifteen who paid arrears and forty-two by transfer from other

States). On the other hand, ninety-three have been lost (eight by death, five by resignation, fifty-three by transfer to other States, twenty-seven whose subscriptions have been allowed to fall two years in arrears), thus showing a net gain of fifty-five members.

We have to record with regret the deaths of the following members: Sir Harry Allen, Dr. Melrose Mailer, Dr. Frank Andrew, Dr. Mary Mitchell, Dr. John Pollock, Dr. D. H. Young, Dr. A. Honman, Sir Charles Ryan.

Ethics.

The attention of the Council was drawn to the publication in newspapers of the names of medical practitioners in attendance on His Excellency the Governor. Members were informed that the Council had repeatedly requested the editors to refrain from publishing the names of medical practitioners in attendance on patients, but the editors had declined to withhold such names in special cases, such as Vice-Royalty.

The publication of the names of the medical and surgical staff in a hospital magazine offered for sale to the public was disapproved. The editor of the magazine, on his attention being drawn to the Council's wishes, withdrew the notice.

It was resolved that, on application for membership of the Branch and before election all applicants should receive a copy of the Ethical Principles and that the Ethical Principles should be printed on the back of the application form for membership.

Steps were taken to obtain information as to the possibility of excluding a member of the Branch otherwise than by expulsion.

The attention of the Chief Secretary was drawn to the fact that there was no authority which had disciplinary powers (except in cases of conviction for felony) over medical practitioners, such as existed in other States and in Great Britain, but no reply has been received.

The Council resolved and the resolution was confirmed at a special meeting of the Branch that it could at its discretion refer to the Ethical Subcommittee for consideration and report to the Council any newspaper article, paragraph or report which imputed to a member of the profession conduct detrimental to the honour of the profession.

A chemist wrote to a medical practitioner suggesting a division of fees for cases sent on to him. The letter was referred to the Pharmaceutical Society without comment. This body wrote to the Council deploring the conduct of the chemist, who expressed regret for his action. He was asked to apologize to the medical practitioner concerned.

A suburban medical practitioner had been offered a position as medical attendant to all employees of a factory on a condition that he accepted a fee smaller than that of the standard scale of fees. The Council informed him that it was not in favour of the proposal.

In reply to a letter from the Registrar of the Midwives Board it was stated that the Council did not encourage the administration of anaesthetics by unqualified persons.

The Australian Massage Association wrote asking for support of its members who did not advertise, and it was advised when sending out a list of its members to members of this Branch, that it should state that those on the list did not advertise and for that reason our members should support them.

Members were asked to refrain from using chemists' forms for prescriptions; such forms were regarded by the Pharmaceutical Society of Victoria as unethical.

A protest was made to the Education Department against medical cards being distributed amongst children to be filled in at home. The Council asked that the cards be enclosed in envelopes. This the Department declined to do. It was also asked that the cards should be collected by the medical officer and not by the teacher, but to this request no reply was received.

Specific instances of fee splitting were supplied to the Council by a member. The matter was referred to the Federal Committee and, on its ruling, the Council reaffirmed No. 9 of the Principles of Medical Ethics: "It is unethical for a member of the British Medical Association in Australia to divide fees with or give commissions to medical practitioners or laymen," and added that the

patient was entitled to a receipt from the consultant, operating surgeon or specialist for the money paid by him in every case where the money was received by such consultant, operating surgeon or specialist from the medical attendant.

The New South Wales Branch was informed that in Victoria lapse of time did not qualify an unethical practitioner for membership. The Council was informed that in that State the disability held for a period of five years from the date that a practitioner relinquished the unethical appointment.

In cases of consultation the duty which ordinarily devolved on the medical attendant in charge of a case was simply to intimate to the patient before a consultant was engaged what the consultant's usual or expected fee was and as far as possible to see that it was paid at the time, unless for financial and other valid reasons deferred payment might be deemed expedient. There was no professional obligation whatever on the medical attendant in charge of a case to be responsible for the consultant's fee.

In reply to a member with regard to giving evidence in a court of law it was pointed out that in a civil case a medical practitioner could not be compelled to give evidence of drunkenness where the wife sued for divorce from her husband.

The following rulings were given:

(a) That it was not unethical to give relevant information to a life assurance society, association or company, provided that the proponent had signed a clause agreed to by the Council of the Branch giving consent thereto.

That for all new policies a declaration similar to that of the Great Pacific Life Assurance Company be accepted as a sufficient protection for medical men:

I hereby irrevocably authorize any physician or other person who has attended, examined, or been consulted by me—or who may hereafter attend, examine or be consulted by me—to disclose at any time hereafter in any suit, action or proceeding or elsewhere, on oath or in writing, any knowledge and information which he or she may in any manner have acquired. And I consent to such disclosure, and expressly waive on behalf of myself and of any person who shall have any interest in any policy issued hereunder all provisions of law or custom forbidding such knowledge or information being disclosed. And I agree that this authority, consent and waiver shall remain in full effect as well after my death as prior thereto.

That companies and societies or associations should be called upon to show the special declaration on the request of the medical practitioner.

(b) A member should not report to an insurance company with regard to an eye injury of a patient in the Caulfield Repatriation Hospital without the permission of the Department and the written permission of the patient.

(c) That where a statement was made on oath by a medical practitioner in a court of law with regard to surgical or medical treatment by another practitioner, it could not be made a matter of inquiry by the Branch Council, even though the second practitioner had not had an opportunity of rebutting the evidence given.

(d) A former assistant to a suburban medical practitioner was informed that he should not put up his plate or have his consulting rooms within three miles of the residence of his late principal, but he might see any patients residing within that proscribed area provided he had not seen them professionally as assistant.

(e) That a medical practitioner, except under the most exceptional circumstances, was not justified in prescribing medicine containing a dangerous drug for a person whom he had not seen.

(f) That in regard to advertisements announcing partnerships, regulations as to commencing practice applied.

(g) That the regular visiting of baby welfare centres by medical practitioners engaged in private practice in the district was undesirable.

(h) That a *locum tenens* had rights similar to those of his principal and his principal had rights through the *locum tenens* and that any other practitioner who might be called in to attend a patient should satisfy himself that the services of the previous attendant, principal or *locum tenens* had been dispensed with by notice to such attendant before the practitioner took over the case. In case of emergency, urgent treatment might be undertaken at once and then the foregoing conditions should be complied with. The patient might refuse to see a *locum tenens*, but if the patient did see the *locum tenens*, the latter had the same rights as the principal.

(i) A visiting medical practitioner in attendance on a patient at a holiday resort should collect the fees for professional work done by him and send them on to the local practitioner.

(j) Industrial medical officers should refer employees to their own private practitioners.

(k) That school medical reports should refer all pupils requiring medical and/or surgical attention to their family medical attendant.

Homœopathy.

Specialists were permitted to accept honorary appointments on the staff and more recently a member of the staff of the Homœopathic Hospital, on certifying that he did not designate his practice as based on exclusive dogma, was admitted to membership of the Association.

Broadcasting.

On several occasions where it was proposed that a medical subject should be broadcasted, the Manager of the Amalgamated Wireless Company of Australia, Limited, courteously referred such proposals to the Council for its approval and in each case its opinion was respected. The Manager of the company was cordially thanked for his consideration.

At his request the Council arranged for a lecturer to broadcast matters relating to first aid.

The Council resolved that it was desirable that all public pronouncements to be broadcasted on medical subjects should be made anonymously by a member or members approved by the Council.

Organization.

The second annual conference of the Branch was held in November of last year. The results of its deliberations were sent on to the Council, which remitted them to the various committees for report. It was thought advisable to hold the conference in future at longer intervals than one year, so that matters in sufficient quantity and importance might be laid before the members.

At the instance of the conference the friendly societies were asked by the Council to provide a prescription book for each of its members. This request was acceded to by all but one society. The Friendly Societies' Association stated that the other request of the conference was impracticable, *videlicet*, that the prescription book should be stamped that the member was financial. The Branch agreed to call the attention of lodge members to the condition that they should leave messages at the medical officers' surgeries before 9.30 a.m.

At Yallourn the local Medical and Hospital Committee is paying a fixed sum for all medical services. The Council ruled that in any contract service there must be no deviation from the Wasley award. As there were exceptional circumstances at Yallourn, it agreed to allow some form of contract service for those employees receiving salaries above the income limit as laid down by the award. A conference has been arranged between the Hospital Committee at Yallourn, the Chairman of the Electricity Commissioners and delegates of the Council and it is hoped that some scheme will be evolved which will be satisfactory to all parties.

At the instance of the Federal Committee, the Council approved of the principle of a uniform lodge agreement for the whole of the Commonwealth.

The Council ruled that a lunacy certificate was not a certificate for the purposes of the lodge.

The Secretary of the Ancient Order of Foresters was informed of a typographical error in the form of agreement. The words "female members" should read "female lodges." This amendment is now made in all agreements submitted to this Branch for endorsement.

The Independent Order of Rechabites expressed its willingness to pay 10s. 6d. for the short certificate in connexion with death benefits. This was accepted by the Council.

The Council formulated and adopted conditions of attendance by medical officers on factory employees and resolved that for all factories, the rate of one guinea per attendance of one hour, or fraction of an hour per day under Section 3 of the industrial surgeons' agreement (approved by the Federal Committee) should be paid. Visits made to the factory outside the hours specified in the agreement should be charged for at ordinary fees. Where more frequent attendances were required, the minimum salary that should be paid should be subject to the approval of the Council. Where the attendance was required on each day of the week, a minimum annual salary of £250 should be paid. These conditions were forwarded to the Federal Committee which endorsed them.

It was decided that a health officer making Schick tests should charge one guinea per hour in addition to travelling allowance.

Medical practitioners were advised when seeking positions as medical officers of health to local municipalities to peruse carefully the code of duties for a medical officer of health and to consider whether the salary offered was commensurate with the duties expected of them. Their attention was particularly drawn to the matter of travelling allowances and as to whether special arrangements were to be made for epidemic and exceptional work.

With regard to payments to municipal health officers, the Council suggested that extra work should be paid for at the rate of one guinea per hour and travelling expenses. The duties of health officers should be those laid down in the general code under the *Health Act* 1919 and the salary as recommended by the conference of medical officers of health, 1919.

It was considered that special hospitals should be provided for epidemic diseases.

The question of the terms of service of surgeons to football clubs was considered. The following scale of fees was adopted: That for surgeons to League clubs, where attendance at a football match was not obligatory, the salary should be twenty-five guineas per year, and private fees to be charged for after treatment. In Association clubs the fee should be ten guineas. That if the surgeon was expected to attend every match, one guinea per attendance should be paid and private fees for after treatment should be charged. That where no surgeon was appointed, private fees should be paid.

These schemes will be submitted to the annual meetings of the clubs in February next.

It was recommended also that the attendance upon a player should be first-aid only and that for further treatment he should be referred to his own medical attendant.

Subdivisional meetings which were held in suburban districts during July and August, were well attended and interest in the affairs of the Branch was quickened.

The balance of money in hand from the Guarantee Fund raised during the lodge dispute some years ago was returned *pro rata* to the contributors.

Scientific Committee.

This committee arranged the scientific and clinical meetings for the year.

Following on the successful subdivisional meeting at Warrnambool in March, last year, week-end meetings were held in Ballarat in March, in Geelong in July and in Bendigo in October.

These meetings were well attended and the subdivisions were cordially thanked for the trouble taken in providing programmes of great scientific value and for the hospitality

shown to the visitors. The routine observed in each case was a clinical meeting at the hospital on the Saturday afternoon; there was a dinner and papers were read in the evening, while the wives of visiting members were entertained by the wives of the resident practitioners. On the Sunday a motor picnic was arranged. At Bendigo, the Mayor gave a civic reception to the visitors at the Town Hall.

An invitation was received from the Mildura Shire Council for members of the British Medical Association to spend a week in Mildura. It was found impossible to fit in this arrangement with a divisional meeting at Mildura, owing to the programme for the balance of the year being full, but it was hoped to arrange a visit to Mildura in 1927.

Medical Agency.

The agency continues to prosper, although it does not receive the support from the members that the Council would desire. The object of the agency is to give satisfaction to members in all their dealings with regard to practices and *locum tenentes*. It is deserving of wholehearted support from every member.

Melbourne Permanent Post-Graduate Committee.

Early this year an addition was made to the title of the Post-Graduate Committee to indicate the fact that the committee was founded by the Branch in February, 1920.

In June last ten practitioners entered into residence at the Women's Hospital for two weeks and lectures and demonstrations were given under the auspices of the committee.

Last winter a new scheme was carried out, namely, weekly lectures at the Medical Society Hall, from 4.15 to 5 p.m. Sixteen lectures were given and the average attendance was about sixty.

During the year also lecturers have been sent into country districts when requested.

Last September Professor Wood Jones, Professor of Anatomy in the University of Adelaide, gave four lectures on "Some Wider Problems of the Central Nervous System." About ninety attended these lectures which were enthusiastically received.

Dr. Robert Fowler, as convener of the Scientific Committee, has been added to the committee at the request of the Council of the Branch.

Thirty members took part in the November course just concluded.

The committee desires to intimate that arrangements are in progress whereby the advanced winter course for 1927 may be delivered by two very distinguished Americans, one a surgeon and one a physician. They will lecture to members of the British Medical Association under arrangements made by the committee.

Legislative Committee.

To avoid as far as possible conflict of medical evidence in a court of law, a conference was held with representatives of the Law Institute and the Committee of Counsel. It was found that it would be impossible for medical witnesses to meet and to agree on their evidence beforehand. It would probably save a large amount of conflicting testimony if a medical assessor sat with a judge.

On the recommendation of this committee, the Council is arranging for a conference of superintendents of public hospitals with a view to drawing up a standard system of nomenclature of disease for Victorian medical practitioners. The Secretary of the Charities Board will be asked to attend this conference.

The rules of the Branch were amended so as to provide for a filling up of all vacancies among representatives of the Council prior to the general election in December.

Contributory Hospital Schemes.

A contributory scheme is in operation at the Sale Hospital, whereby the Yallourn Medical and Hospital Committee pays to the Sale Hospital a certain amount per week while any of the Yallourn employees are in hospital. As the hospital will only receive cases which after investigation are found to be unable to pay for medical or surgical treatment, there are no objectionable features in this scheme. This also applies to Warragul.

A proposed contributory scheme at Geelong was abandoned when it was pointed out that it was opposed to the policy of the Branch.

Royal Commission on Health.

The Report of the Commission was considered at the request of the Federal Committee and certain addenda were suggested: That for the purpose required by the Commonwealth Statistician, uniform certificate forms should be furnished by the Commonwealth Health Department; that the State Government should be asked to request the Commonwealth Government to take over general powers to legislate on health; that more venereal clinics should be established in larger centres and be more widely distributed in each centre, the medical staff should receive adequate remuneration; that disciplinary powers should be taken under the principal act of registration.

Hydatid Disease.

The Council offered its cooperation with the State medical officers of health in combating hydatid disease.

Standardization of Hospitals.

The Council requested the medical staffs of the various hospitals in Victoria to ask the committees to take no action with regard to the standardization of hospitals under the American College of Surgeons until the matter had been further considered by the Council. This matter was also referred to the Branches in the other States, but it was found that no hospital in any of the other States had been approached.

Appointments.

The Charities Board appointed as a medical advisory committee: Sir George Syme, Dr. A. V. M. Anderson, Dr. L. S. Latham, Dr. B. T. Zwar, Dr. R. G. McPhee, Dr. J. Newman Morris and Dr. Victor Hurley.

Dr. J. W. Dunbar Hooper was appointed to the Committee of the Australian Inland Mission, which proposes to deal with the question of a "flying doctor" for outback districts.

Dr. R. H. Fetherston and Dr. J. Newman Morris were appointed by the Governor-in-Council Trustees of the Medical Society of Victoria.

Dr. R. J. Bull and Dr. W. J. Penfold were appointed representatives at the Royal Sanitary Institute Congress held in London.

Dr. R. J. Bull was appointed representative and Dr. W. J. Penfold and Garnet Leary were appointed delegates at the Annual Representative Meetings.

Dr. W. Kent Hughes was appointed a representative on the Big Brother Movement. Dr. Kent Hughes was also appointed Honorary Fellow and extra Councillor of the Incorporated Institute of Physical Culture. This institute, at the suggestion of the Council, amended its constitution so as to prohibit diagnosis of physical complaints by its members.

Dr. J. Leon Jona was appointed a representative at the national baby week conference held in London.

Professor W. A. Osborne was appointed a delegate of the Australasian Association for the Advancement of Science which met at Perth.

Dr. Hugh Murray and Dr. Rupert Downes were nominated for appointment to the Masseurs Board.

Welfare of Women and Children.

At the request of the Council a copy of the report by Dr. Main and Dr. Scantlebury was sent *gratis* from the Public Health Department to each member of the medical profession.

Public Questions Committee.

A public questions committee, consisting of Sir George Syme and Dr. L. S. Latham, Dr. B. T. Zwar, Dr. Gordon Shaw, Dr. C. H. Kellaway and Dr. D. G. Robertson was formed and its first report was adopted.

Its activities were defined as being to give information to the press on matters of medical interest which might be brought before the public in cable messages or in any other way, when asked by the press to do so, such informa-

tion to be authentic; secondly, to instruct and educate the public by means of articles in the press or some other way, on matters which the committee thought the public should be informed about, for example preventive medicine, tuberculosis and so forth. The editors of the leading newspapers approved of the proposal and it was agreed that anonymity should be preserved. Presidents and secretaries of the various sections have been asked to give the required information themselves or to refer the editors to the best man for the purpose. The Colonial Mutual Life Association will publish a pamphlet on tuberculosis in cooperation with this committee.

Cancer Propaganda.

A subcommittee with power to coopt was appointed by the Council, its object being to deal with cancer propaganda. The personnel of the committee is: The President, Sir George Syme, Professor MacCallum, Dr. Victor Hurley, Dr. Fay Maclure, Dr. Gordon Shaw and Dr. C. H. Kellaway.

Secretary.

The Crown Law Department acceded to the wishes of the Council and appointed the Secretary of the Association a Justice of the Peace. Already this appointment has proved a convenience to a number of medical practitioners.

Shortage of Midwives.

At the annual conference a resolution was passed at the instance of the South-Western Subdivision that the Council should inquire into the possibility of increasing the facilities for the training of midwives and whether arrangements could be made with country hospitals for midwives to be attached for duty to their staffs during such times as their services were not required in the homes of people. Members of the Obstetrical Committee, Royal Victorian Trained Nurses' Association, Midwives' Board, Obstetrical Committee of the Council and Dr. Marshall Allan were invited by the Council to confer. This conference brought in a long and valuable report which is still engaging the attention of the Council.

Salaries.

The Executive of the Commonwealth Medical Officers' Association appealed to the Federal Commissioner for increased remuneration, and at their request a subcommittee of this Branch met them in conference. As a result Sir George Syme and Dr. Newman Morris gave evidence before the arbitrator and substantial increases in remuneration were awarded.

A conference was held in October with the State medical officers and a subcommittee was appointed to inquire into the salaries and status of these officers.

A protest was lodged with the Education Department against the reduction of the travelling allowance made to its medical officers.

By-laws.

It was resolved that, without waiting for incorporation of the Branch, the Council should adopt by-laws. All members on election should sign these by-laws and regulations. The question of incorporation is under consideration of the Legislative Committee.

Obituary.

There was placed on the Minutes an expression of keen regret at the loss of Sir Harry Allen who was an eminent member of the profession. He had been a Trustee of the Medical Society of Victoria, President and Secretary of the Branch and editor of the *Australian Medical Journal*.

With regret we record the death also of Sir Charles Ryan, one of the earliest members of the Medical Society of Victoria and a Trustee until shortly before his death.

Dr. Andrew Honman was also a distinguished member of the Association and a hard worker in organizing the profession. He was President of the Branch in 1915. Letters of sympathy were sent to the relatives of the deceased, and an appreciation of the high esteem in which they were held by members of the profession.

Scale of Fees.

The standard scale of fees has been enlarged by the addition of a scale of fees for clinical pathology. This was approved at a Branch meeting.

Federal Committee.

There were two meetings of the Federal Committee and its proceedings were published in THE MEDICAL JOURNAL OF AUSTRALIA.

The Council resolved that the travelling expenses of both the Victorian representatives should be paid for all meetings of the Committee.

Australasian Medical Publishing Company, Limited.

This company placed before the Branch a proposal to increase the price of the journal by 10s. *per annum* and in return to give a forty-page issue. The Council approved of an increase in the size of the journal, but could not agree to an increase in the price.

Australasian Medical Congress (British Medical Association).

The second session will meet in New Zealand early in February. Dr. Frank L. Davies is the Honorary Secretary for Victoria, and a large complement from this State will be present.

Armistice Day.

On November 11 in the presence of members of the Branch and relatives of the deceased, the President (Dr. H. Douglas Stephens) laid a memorial wreath on the statue erected to the memory of the forty-two medical officers who lost their lives in the Great War.

British Medical Insurance Company.

This company has been established with a board of directors, of which Dr. Mollison is Chairman. Mr. Brindley, of the Automobile Insurance Company, is the Manager. The company undertakes all form of insurance except that of life insurance and workers' compensation. In addition to the liberal terms offered, each member insuring participates in the profits. Members should advise the manager of the date of expiry of their present policies, when he will attend to the transfer to the British Medical Insurance Company.

New Graduates.

The Branch entertained the recent graduates at a smoke night in the Medical Society Hall in June. A good programme of entertainment was provided and impressive addresses were given by members of the Council.

Public Library.

The Public Library authorities were asked by a general meeting of members and by the Council, to throw open to medical practitioners and students that portion of the library dealing with medicine and allied subjects. A reply was received that none of the medical literature was recent and that it was on the stack-shelves in the basement and so the request could not be complied with. Current periodicals were available on request.

Early Notification of Births.

The Public Health Department asked the Council for its opinion as to notification of a birth within three days, the object being to enable the infant welfare authorities to get into early touch with the mother. A reply was sent that as the notification would result in an infant welfare nurse visiting a house where a family doctor was in attendance, the Council did not agree to the proposal. A later suggestion that the infant welfare nurse should be instructed only to visit a mother where no medical practitioner was engaged is still under consideration.

Canberra.

The New South Wales Branch was asked to temporarily take charge of British Medical Association interests in Federal territory.

Medical Museum.

Dr. J. S. Mackay presented a number of cases of obsolete instruments in perfect order as a nucleus of a medical museum. The Council has in its possession autographed letters of Lister and Jenner.

Pharmaceutical Society.

Twelve hundred and fifty copies of the Australian Pharmacy Formulary were donated by the Pharmaceutical Society to the Council and these were distributed amongst members.

Monthly Meetings.

Ten monthly meetings, seven clinical meetings and eight special meetings were held during the year. The following papers were read:

February.—Dr. W. Colin Mackenzie: "The Principles and Medical Significance of the Human Erect Posture."

March.—(a) Dr. T. S. Campbell: "Non-Specific Usage of Anti-Diphtheritic Serum." (b) Dr. D. Montgomery Paton: "Non-Specific Immunity."

April.—(a) Mr. R. G. Menzies (Barrister): "Medico-Legal Aspect of the Workers' Compensation Act—What Constitutes an Accident?" (b) Mr. L. I. Skelton (representing the Underwriters' Association): "The Medico-Legal Aspect as Applied to Insurance Companies." (c) Dr. John Kennedy: "Some Aspects of the Workers' Compensation Act." Clinical evening at Austin Hospital.

May.—(a) Dr. A. E. Taylor: "Heterodox Opinions." (b) Dr. Mary De Garis: "Application of the New Definition of Normal Labour to the Clinical Study of Obstetrics." Clinical evening at Melbourne Hospital.

June.—Dr. C. Gordon Shaw: "Urogenital Tuberculosis." Clinical evening at Saint Vincent's Hospital.

July.—(a) Dr. E. H. Molesworth (Sydney): "Leprosy in Eastern Australia." (b) Dr. A. H. Tebbutt (Sydney) read a paper with lantern illustrations. Clinical evening at Women's Hospital.

August.—Dr. Raymond Hennessy: "Common Inflammatory Conditions of the Mouth and Pharynx." Clinical evening at Alfred Hospital.

September.—(a) Sir George Syme: "The Importance of Propaganda in the Solution of the Cancer Problem." (b) Dr. C. H. Kellaway: "Recent Research on Cancer." Clinical evening at Eye and Ear Hospital.

October.—Mr. Alan Newton: "Some Experiences of Surgery of the Gall Bladder and Bile Ducts."

November.—Demonstrations and lectures in the Anatomy Department of the University of Melbourne. Clinical evening at the Children's Hospital.

Special Meetings.

December, 1925.—Dr. Malcolm MacEachern, of the American College of Surgeons, delivered an address.

January, 1926.—Dr. Malcolm MacEachern, of the American College of Surgeons, delivered an address.

March.—Sir James Barrett showed cinematograph films on subjects regarding public health. Week-end meeting at Ballarat.

April.—Dr. Colin Mackenzie delivered a lecture on "The Cohuna Skull."

July.—Week-end meeting at Geelong.

October.—Week-end meeting at Bendigo.

November.—Dr. Marshall Allan read a paper on "Obstetrical Practice in Victoria."

By order of the Council,

S. STANTON CROUCH, Secretary.

Librarian's Report.

During the year the library has been more freely used by members than in previous years. This applies not only to city members, but also to country members, to whom we are able to offer better facilities now for references to books and periodicals.

We have to note with satisfaction that fewer books and periodicals have been lost and no cases of mutilation of library books have been brought under our notice since the appointment of a permanent library clerk.

Though we have not been in a position to spend freely in the buying of new books and periodicals, we have to record that since the last report one hundred and seventeen books have been added to the library. Ninety-two periodicals have been received during the year and sixty-eight volumes of periodicals were bound.

We wish to record our thanks to Dr. F. Hobill Cole, Dr. J. W. Dunbar Hooper, Dr. J. Newman Morris, Dr. J. E. Nihill, Dr. W. Kent Hughes, Dr. A. V. M. Anderson, Dr. F. Nyulasy, Dr. Mary De Garis and Dr. C. R. Merrillees for literature presented during the year.

R. H. FETHERSTON,

W. G. D. UPJOHN,

Honorary Librarians.

President's Address.

DR. H. DOUGLAS STEPHENS, the retiring President, delivered an address (see page 821).

DR. J. W. DUNBAR HOOPER said that he considered it an honour to have been asked to propose a vote of thanks to the retiring President for his address and for his work in the presidential office during the year. He felt very strongly that such a thoughtful, well prepared and impressive address should reach as wide an audience as possible. It should be broadcast in the interests of the profession. They had often been asked why they did not speak to the public through the press and here was an excellent opportunity. The publication of such an address in the lay press would help materially in gaining a better understanding of the medical profession on the part of the public generally. He had much pleasure in proposing the vote of thanks.

DR. R. R. STAWELL said that he welcomed the opportunity of assuring the President of their sincere appreciation of his work during the year and his exceedingly interesting address. The most unimaginative among them must realize the heavy burden of work discharged by the President and members of the Council in their interests throughout the year. Dr. Bull had paid a high tribute to the men in high places in the British Medical Association, but they could justly claim to have men of the same stamp carrying out similar duties. Dr. Stawell said that he had been impressed by the pleasant, genial and unassuming manner in which the President had carried out his duties. His presence at the various meetings seemed to create just the right atmosphere. The address, embracing as it did a wide scope of important subjects, revealed throughout a wise, unselfish level-headedness.

DR. H. DOUGLAS STEPHENS, in returning thanks, said that he had had a very pleasant term of office. He paid a high tribute to the conspicuous ability and kindly manner in which Dr. J. Newman Morris, the Chairman of Committees, had guided the Council through the business of the year. Dr. Morris was indefatigable and it did not seem possible to upset his equanimity. All the members of the Council had been very kind and generous in their cooperation.

Correspondence.

MEDICAL EDUCATION IN VICTORIA.

SIR: In your issue of November 20, 1926, there are, I regret to observe, several inaccuracies relative to the Medical School in the University of Melbourne. The Faculty of Medicine has, as yet, made no attempt to prevail on the Council "to recast the whole curriculum on a logical basis." A committee of the Faculty has the problem under consideration and it has prepared a tentative scheme for discussion only which we greatly regret has been denied publication in THE MEDICAL JOURNAL OF AUSTRALIA. It was naturally felt that a subject of such importance, especially in view of the recasting of the curriculum by the General Medical Council, should receive

the fullest consideration and a wide publication was obviously the first necessity, if justice was to be done to any revision of the medical curriculum.

Further, I do not think it adequately reflects the first year of scientific subjects to say that "the minimum amount of knowledge of these four subjects demanded is not high." I am informed by those who are in the best position to know that the standard in, for example, physics for first year students of medicine, in this University, is considerably higher than in many British Universities.

The statements relative to the higher degree of Master of Surgery are inaccurate in all respects. A very severe examination in anatomy, pathology and surgery in its several branches is demanded and the result is that the degree ranks high.

It is, unfortunately, by no means certain that Medical School and hospital will be brought into close touch after long waiting, but it is obvious that such is most desirable and, indeed, essential.

Yours, etc.,

RICHARD J. A. BERRY,

Dean of the Faculty of Medicine.

The University of Melbourne,
Carlton, November 23, 1926.

[Professor Berry is in error when he states that the tentative scheme has been denied publication in these columns. The scheme was sent to us by him without any explanation of its significance, in response to a request for details of any alterations that have been effected during the last twelve months in the medical curriculum. It was assumed on information supplied from another source that this scheme had already been forwarded by the Faculty of Medicine to the Council. Professor Berry now informs us that this is not in accordance with fact. We therefore wish to express regret for having published an inaccurate statement. In regard to the degree of Master of Surgery we would point out that the information published in our issue of November 20, 1926, is based on the information supplied to us by Professor Berry and published in the Education Number last year.—EDITOR.]

SIR: The following statement, referring to the education of medical students in the University of Melbourne, occurs in the issue of your journal of November 20, 1926: "The first year is devoted to chemistry, physics, zoology and botany. The minimum amount of knowledge of these four subjects demanded is not high."

While it is realized that the amount of physics that can be taught students in one year is not excessive (even assuming, as we do, a preliminary knowledge of physics to "intermediate" standard), the standard of the physics course in Melbourne compares very favourably with that of courses given in Great Britain, where some students only study the subject at school. The course is considerably more advanced than some of the English courses which have actually come under the writers' notice; this is corroborated by certain physics textbooks which have been published recently in England for the use of medical students and which do not cover the extent of our course.

There is a recommendation of the General Medical Council that the teaching of physics should, whenever possible, be related to the subsequent work of the students. So far as we are aware, ours is one of the few courses which in the first year, makes a serious attempt to do so.

During the course, for example, it is shown how the principles of hydrostatics and hydrodynamics are involved in the measurement of blood pressure and how the conservation of energy is applicable to the human body. In addition the following parts of the subject are dealt with in greater detail than is customary: the colloidal state; hydrogen ion concentration, X rays, radioactivity, high frequency currents.

Yours, etc.,

T. H. LABY,

Professor of Natural Philosophy.

J. STANLEY ROGERS,

Lecturer in Physics to Medical Students.

The University of Melbourne,
Carlton, December 2, 1926.

[Professor Laby and Dr. Rogers have apparently not read the report of the special committee on medical education appointed by THE MEDICAL JOURNAL OF AUSTRALIA. This report was published in THE MEDICAL JOURNAL OF AUSTRALIA on March 27, 1920. Had they done so they would have realized that the reform required by the General Council of Medical Education and Registration of the United Kingdom was anticipated by this journal a considerable time ago. Since medical knowledge is based almost entirely on the three fundamental sciences of chemistry, physics and biology, it appears to us to be essential that a relatively high standard should be attained during school education by those seeking admission to the medical schools and that advanced physics and chemistry and physics and chemistry applied to medical problems should be taught students throughout the whole course. The teaching in Melbourne is undoubtedly admirable, but we still maintain that the standard cannot be sufficiently high in view of the fact that this teaching is restricted to the first year of the curriculum.—EDITOR.]

LUMBAR PUNCTURE IN EPILEPSY.

SIR: A recent case has again drawn my attention to the very suggestive and interesting article by Drs. G. P. U. Prior and A. T. Edwards in the issue of your journal of October 16, 1926.

Briefly, an imbecile of seven years recently in this hospital developed *status epilepticus* upon which enemata, bromide and chloral medication *per rectum* had no effect. She appeared to be quite comatose and rather prematurely as I settled down to do a lumbar puncture, I discussed arrangements for the "post mortem." The fluid was decidedly under pressure when taken away. By the next morning the child except for a slight pyrexia had recovered! Whilst few will deny the utility of lumbar puncture, there will be differences of opinion as to how it is brought about.

Are we to consider that excessive pressure of cerebro-spinal fluid acts adversely on a liver controlling centre in the brain or spinal cord? A word from the authors would be interesting on this point, as they are not explicit in their article.

The reason why chronic alcoholics should develop epilepsy has never been satisfactorily explained; since there are undoubted liver changes, it would provide a further proof concerning the culpability of the liver in the matter of epilepsy.

Yours, etc.,

JOHN BOSTOCK.

Mental Hospital,
Newcastle, New South Wales,
December 8, 1926.

PSYCHOANALYSIS AND PSYCHOTHERAPY.

SIR: I read with much interest the article by Professor Lowson which appeared in your issue of November 6, 1926.

It is gratifying to know that we have in Australia a man of Professor Lowson's attainments who has become convinced of the fundamental principles underlying the psycho-analytic method of treatment, first devised by Breuer and later raised to such a high standard by Professor Freud.

My own experiences with soldiers suffering from war neuroses completely bears out all that Professor Lowson has said. There is no doubt of the undoubted benefit derived in many of these cases by "abreaction" and there is further no doubt that a complete course of psychoanalysis in those who are suitable, leads in a fair percentage of cases to brilliant therapeutic results.

No other method of treatment gives results anything to be compared with psychoanalysis in the psychoneuroses. It is only by coming in intimate and lasting contact with these unfortunate people that the truth of Professor Freud's fundamental propositions becomes borne in upon one with irresistible conviction.

The absurd criticisms and childish opposition of certain armchair philosophers to the Freudian doctrine can only be ascribed to a complete ignorance of mental functioning and a lack of intimate contact with human neurotic suffering.

The cases of war neurosis that I have subjected to complete analysis, some twelve in number, have shown me that the underlying basis was a disturbance of the infantile sexual *libido*, the outstanding factors being either a strongly developed homosexual component or a high degree of narcissism.

It is earnestly to be hoped that the Freudian doctrine be studied and applied in Australia, so that as Professor Lowson wisely remarks we may be in a better position if war should come again and further that we may be able to elucidate the causes of neurotic suffering and delinquent conduct and give some help to lessen the burden of each in the community.

Yours, etc.,

PAUL G. DANE.

61, Collins Street, Melbourne,
November 10, 1926.

THE Director-General of Health is anxious to obtain a copy of the Transactions of the Eleventh Session of the Australasian Medical Congress, Brisbane, 1920, for the Departmental Library. He will be indebted to any reader who will be good enough to donate a spare copy to his Department.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of *The Medical Act*, 1912 and 1915, as duly qualified medical practitioners

King, Stanley William Milton, M.R.C.S. (England), 1924, L.R.C.P. (London), 1924, Sydney Hospital, Sydney.

Smith, Alan Frederick, M.B., 1926 (Univ. Sydney), District Hospital, Wagga.

For Additional Registration.

Booth, Frederick Stanley, Ch.M., 1926 (Univ. Sydney), Bilgola, Carr Street, Coogee.

Gallagher, William Patrick, Ch.M., 1926 (Univ. Sydney), Woongona, Abergeldie Street, Dulwich Hill.
Stanton-Cook, Lance Hayward, Ch.M., 1918 (Univ. Sydney), Kuring-gai Chase Avenue, Turramurra.

Change of Name.

Manoy, August, to Klippel, Augusta.

QUEENSLAND.

THE undermentioned have been registered under the provisions of *The Medical Act* of 1925, as duly qualified medical practitioners:

Byrne, Godfrey James, M.B., Ch.M., 1924 (Univ. Sydney), Gladstone.

Clayton, George Edward Burdekin, M.B., Ch.M., 1926 (Univ. Sydney), Brisbane.

Hyndes, Paul Francis, M.B., Ch.M., 1924 (Univ. Sydney), Mount Mulligan.

Smith, James Muir, M.B., Ch.M., 1926 (Univ. Sydney), Brisbane.

Southey, William George, M.B., B.S., 1910 (Univ. Melbourne), Goodna.

Egan, John, M.B., B.S., B.A.O., 1923 (National University Ireland), Gympie.

VICTORIA.

THE undermentioned have been registered under the provisions of the *Medical Act, 1915*, as duly qualified medical practitioners:

Hamilton, John Bruce, M.B., Ch.M., 1924 (Univ. Sydney), Eye and Ear Hospital, Melbourne.

Kirkland, William Bruce, M.B., B.S., 1925 (Univ. Melbourne), Hart Street, Caulfield.

Books Received.

- FUNDAMENTALS OF THE ART OF SURGERY, by John H. Watson, M.B., B.S. (London), F.R.C.S. (England); 1926. London: William Heinemann (Medical Books) Limited. Demy 8vo., pp. 358. Price: 17s. 6d. net.
- A GUIDE TO ANATOMY FOR STUDENTS OF MEDICAL GYMNASIUMS, MASSAGE AND MEDICAL ELECTRICITY, by E. D. Ewart; Second Edition; 1926. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 350 with illustrations. Price: 12s. 6d. net.
- THE QUARTZ MERCURY VAPOUR LAMP: ITS POSSIBILITIES AND USES IN PUBLIC HEALTH AND GENERAL PRACTICE, by J. Bell Ferguson, M.D., D.P.H., with an introduction by Sir Henry J. Gauvain, M.A., M.D., M.C.; 1926. London: H. K. Lewis and Company, Limited. Demy 8vo., pp. 120 with illustrations. Price: 6s. net.
- ANATOMY, DESCRIPTIVE AND APPLIED, by Henry Gray, F.R.S., F.R.C.S.; Edited by Robert Howden, M.A., M.B., Ch.M., D.Sc., LL.D.; Twenty-third Edition; 1926. London: Longmans, Green and Company, Limited. Royal 8vo., pp. 1400, with illustrations. Price: 42s. net.
- THE INSECTS OF AUSTRALIA AND NEW ZEALAND, by R. J. Tillyard, M.A., Sc.D. (Cantab.), D.Sc. (Sydney), F.R.S., F.N.Z. Inst., F.L.S., F.G.S., F.E.S., C.M.Z.S.; 1926. Australia: Angus and Robertson, Limited. Royal 8vo., pp. 576, with illustrations. Price: 42s. net.
- A HANDBOOK OF RENAL SURGERY, by F. McG. Loughnane, F.R.C.S.; 1926. London: Longmans, Green and Company, Limited. Demy 8vo., pp. 225, with illustrations. Price: 10s. 6d. net.
- THE FUNDAMENTALS OF SCHOOL HEALTH, by James Kerr, M.A., M.D., D.P.H.; 1926. London: George Allen and Unwin Limited. Crown 4to., pp. 874, with illustrations. Price: 35s. net.
- TRAITE DES MALADIES DE LA PROSTATE, by George Luys; Prostatectomies et Tumeurs Malignes, by Victor Fauchet; 1926. Paris: Librairie Octave Doin. Crown 4to., pp. 457, with illustrations. Price: 90 fr. net.
- AUTUMN LIST OF NEW BOOKS AND NEW EDITIONS, published by Messrs. Baillière, Tindall and Cox.
- THE OPHTHALMIC YEAR BOOK, Edited by William H. Crisp; Volume XXII.; 1926. Chicago: The Ophthalmic Publishing Company. Crown 4to., pp. 315.
- THE CLINICAL STUDY OF MENTAL DISORDERS, by Lt.-Colonel J. R. Lord, C.B.E., M.B., M.R.C.P. (Edin.); 1926. London: Adlard and Son and West Newman, Limited. Royal 8vo., pp. 82. Price: 6s. net.
- OUTLINES OF DENTAL SCIENCE: DENTAL ANÆSTHESIA, by G. F. Rawdon Smith, M.B., B.S. (London), M.D. (Liverpool); Volume I.; 1926. Edinburgh: E. and S. Livingstone. Crown 8vo., pp. 160, with illustrations. Price: 7s. 6d. net.
- OUTLINES OF DENTAL SCIENCE: DENTAL BACTERIOLOGY, by Ralph A. Broderick, D.S.O., M.C., M.B., Ch.B., M.D.S. (Bham), L.D.S., R.C.S. England; Volume II.; 1926. Edinburgh: E. and S. Livingstone. Crown 8vo., pp. 144, with illustrations. Price: 7s. 6d. net.
- OUTLINES OF DENTAL SCIENCE: DENTAL MATERIA MEDICA, by Prosper H. Marsden, M.Sc., Ph.C., F.C.S.; Volume III.; 1926. Edinburgh: E. and S. Livingstone. Crown 8vo., pp. 155. Price: 7s. 6d. net.
- THE PRACTICAL MEDICINE SERIES, COMPRISING EIGHT VOLUMES ON THE YEAR'S PROGRESS IN MEDICINE AND SURGERY: Under the General Editorial Charge of Charles L. Mix, A.M., M.D.; General Medicine; 1926. Chicago: The Year Book Publishers. Crown 8vo., pp. 737, with illustrations. Price: \$3.00 net.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xxiv.

MELBOURNE HOSPITAL: Medical Superintendent and Medical Vacancies.

PERTH HOSPITAL: Medical Vacancies.

RENNICK HOSPITAL FOR INFANTS: Resident Medical Officer.

ROYAL SOCIETY OF MEDICINE, LONDON: Fullerton Research Studentship.

SYDNEY HOSPITAL: Honorary Ophthalmic Surgeon.

UNIVERSITY OF ADELAIDE: Elder Professor of Anatomy.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Ceduna, Wudinna (Central Eyre's Peninsula), Murat Bay and other West Coast of South Australia Districts.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia. Yarloop Hospital Fund.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

- DEC. 21.—Tasmanian Branch, B.M.A.: Council.
- DEC. 21.—New South Wales Branch, B.M.A.: Medical Politics Committee.
- JAN. 4.—New South Wales Branch, B.M.A.: Council (Quarterly).
- JAN. 11.—New South Wales Branch, B.M.A.: Ethics Committee.
- JAN. 17.—New South Wales Branch, B.M.A.: Organization and Science Committee.
- JAN. 18.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
- JAN. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee.
- FEB. 8.—New South Wales Branch, B.M.A.: Ethics Committee.
- FEB. 15.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
- FEB. 21.—New South Wales Branch, B.M.A.: Organization and Science Committee.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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